DUN'S REVIEW and Modern Industry

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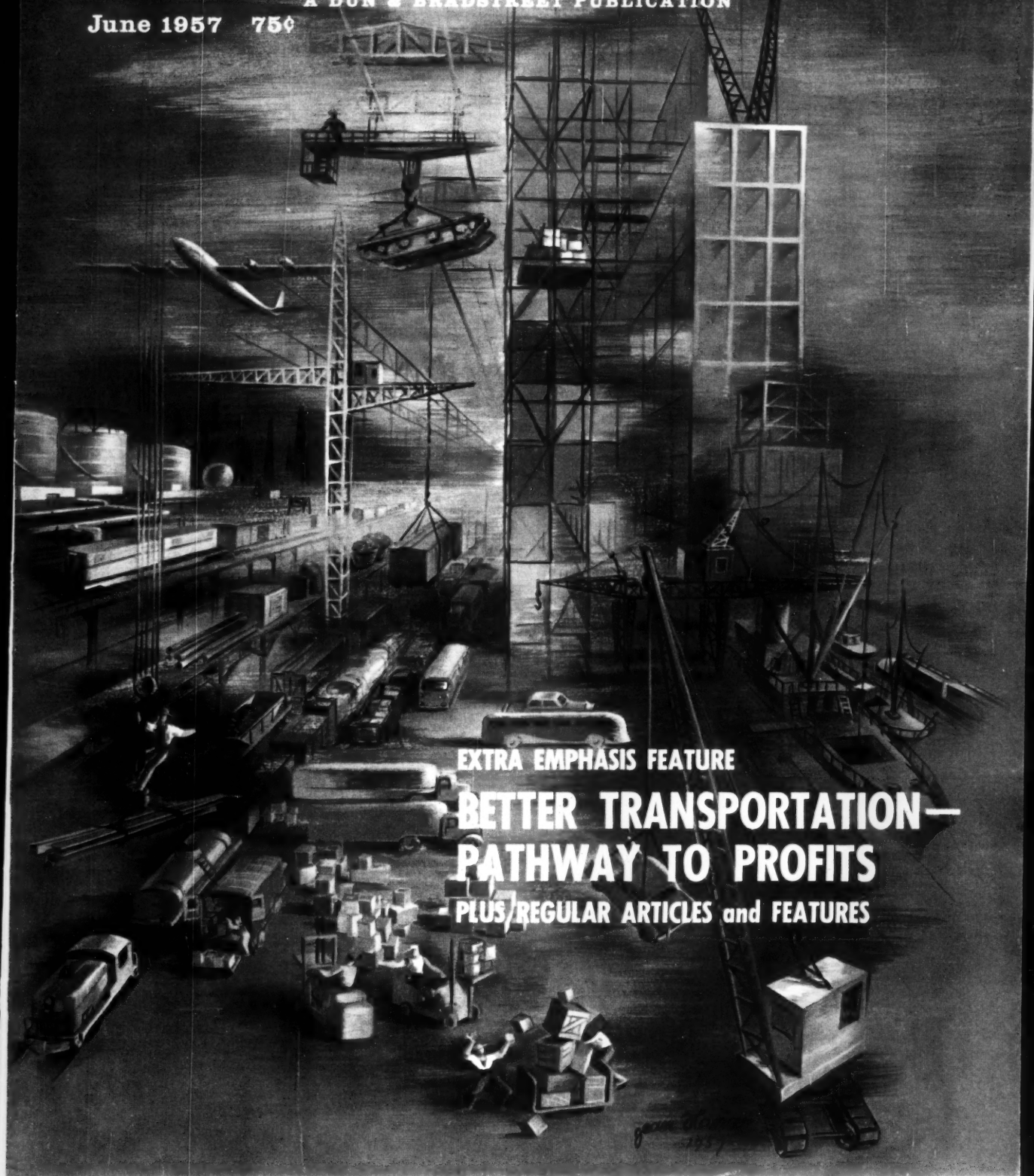

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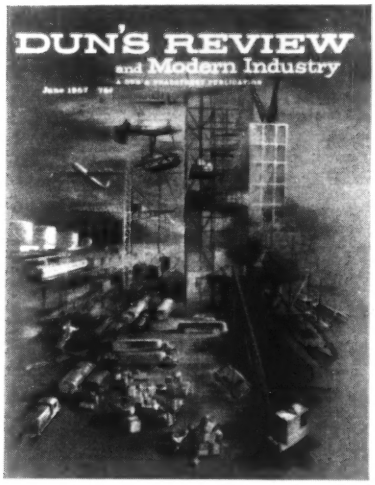

Modern transportation is given a kaleidoscopic treatment in this month's cover, which was painted by Jean Hanau, a naturalized American painter born in France. Mr. Hanau has had exhibitions in Paris, London, and Madrid.

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the REVIEWING STAND

• The Presidents' Panel, which will make its bow in our July issue, offers some formidable statistics. There are 110 presidents of companies with an average of 15,715 employees, or a total of 1.7 million men and women on the payroll. Each company has an average of 16 plants. The oldest on the list is 197 years of age, older than the nation, and the youngest began in 1946, the year after World War II terminated. Total assets of the biggest are $3 billion; of the smallest, $3 million.

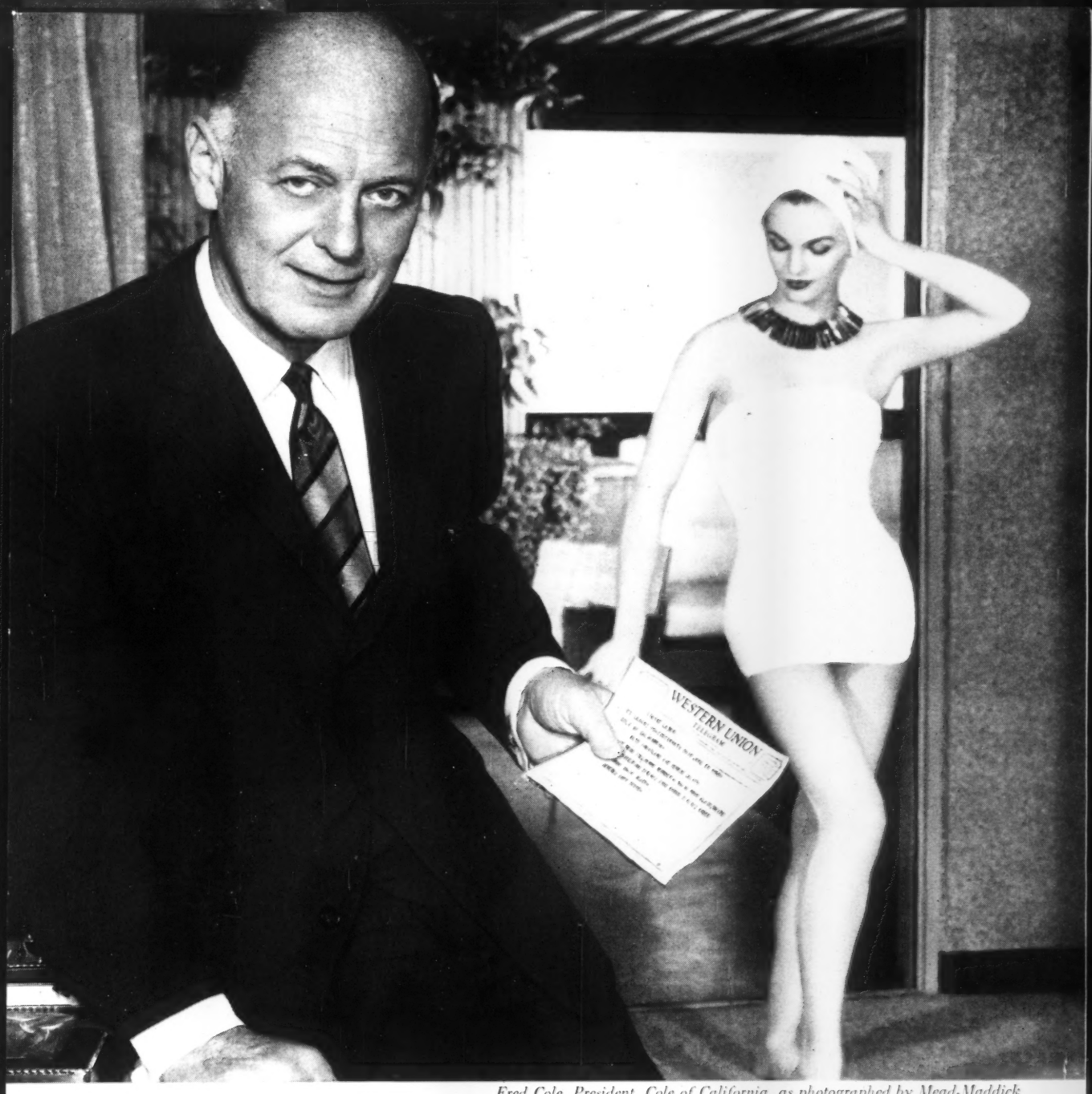
The first series of questions is out; most of the replies have been received and are now in process of tabulation and analysis. Some candid questions were asked (with a bit of trepidation), but the answers are equally candid. Our first impression may be news to many subordinates: "Presidents are people," and the human aspects of the job shine through the answers.

• Every business is a big business to the man who owns it, whether it is a corner newsstand, a machine shop, or a department store. The question of size is relative, but in discussing and debating "big business against small business" definitions are needed, and so are rules of the game.

The Small Business Administration defines a small business as a concern employing 500 or fewer in certain categories or a 1,000 or fewer in others. The average Small Business Administration loan in April was $40,000, with many over $100,000 and several up to $250,000.

Actually, we do have a middle business group of around 125,000 concerns, mostly manufacturers, which represents the core of American productivity and is responsible for half to two-thirds of our annual sales in manufacturing and distribution.

This so-called conflict between "big business" and "small business" is not a clearly defined issue, despite efforts to pit one against the other. Big business buys from small business, sells to small business, and competes with small business; and when



Fred Cole, President, Cole of California, as photographed by Mead-Maddick

Fred Cole shows beautiful figures with telegrams

"Reorders are the profitable part of our business," says Fred Cole, President of Cole of California, "and they could not exist without Western Union! Here's why: swimsuit sales are as sensitive as a barometer to changes in weather. Last summer, for instance, a hot spell in Cleveland brought a run on suits. Store buyers there reordered 101 dozen by wire; we acknowledged by return wire, giving shipping times as well. You just can't beat the telegram for getting business done fast—and in writing!"

More than a million times a day, business finds it wise to wire. Telegrams quote prices, confirm orders, route shipments. Speed plus the written record make the telegram essential to business.

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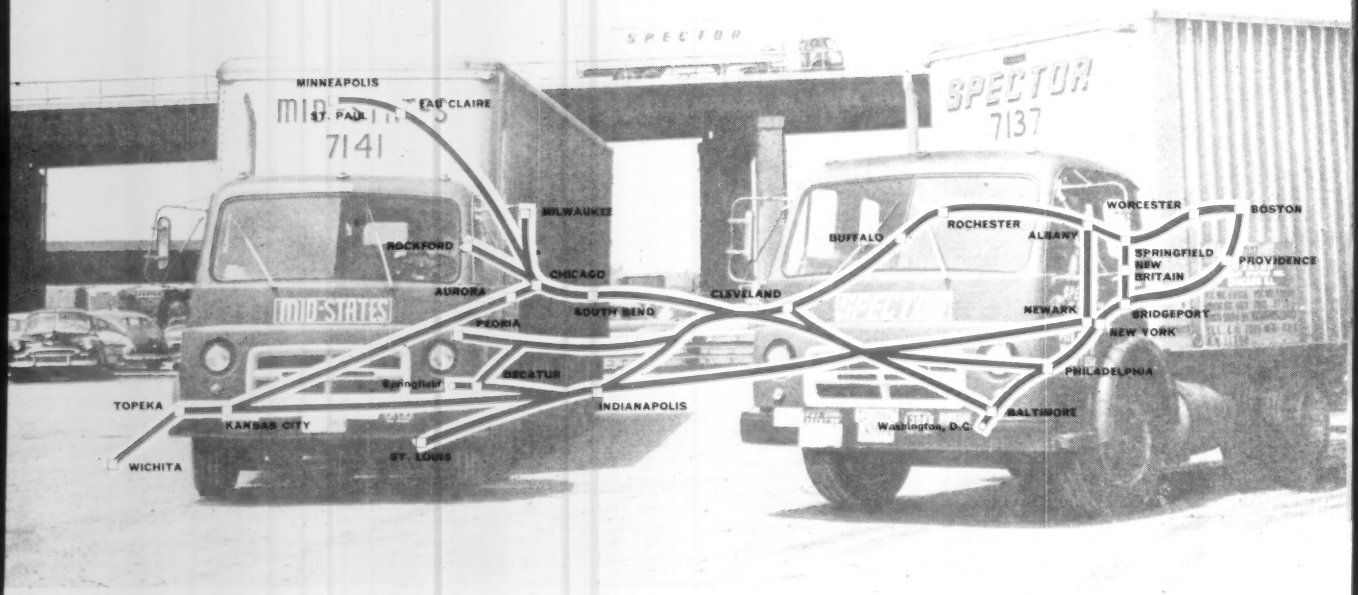

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where they're needed...

when they're needed...

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Now we are one... The Spector–Mid-States Merger and Its Meaning to the Progress of Distribution in America

W. STANHAUS
President

CECIL VERNON
Executive Vice President

ON THE MORNING of January 17th, Interstate Commerce Commission Secretary Harold D. McCoy put his signature to a document which brings together the men and resources of two of the nation's largest and most respected motor common carriers.

Spector—Mid-States

The merger of Spector Freight System and Mid-States Freight Lines was more than three years in the making. It is the result of a long and searching investigation into the economic climate and future of American industry, into the changing distribution patterns of a dynamic national and world marketplace.

During those months, we talked with traffic managers, with distribution people, with educators, economists, corporation presidents and owners of small businesses everywhere. Their observations and recommendations were, perhaps, among the most important influences in our decision to merge.

American business today is intensely concerned with its distribution practices—and its mounting cost. Of these costs, transportation has become an increasingly significant factor. The transportation company—rail, truck, air or water service alike—whose management fails to recognize the implications of this major industrial problem cannot hope to survive, let alone prosper.

We of Spector—Mid-States acknowledge the changing character and needs of American industry today. Its history—from automobiles to refrigerators, from foodstuffs to chemicals—demonstrates the bounties of mass production and mass distribution. Just as there were economies to be realized in the mass production of automobiles, there are new economies, greater values to be realized in mass transportation.

Spector—Mid-States is founded on the principle that American industry must have a flexible mass transportation service at a price which the mass consumer, directly or indirectly, can afford to pay. We are further dedicated to a program of expansion and growth based upon the expressed need for the progressive, personalized service of our past, enhanced by the research and development potentials of our future.

There are other significant reasons why we have merged. The well-being of our people and our families is one. It is our deep conviction that only in enlarging the scope of our individual efforts can we most fully broaden the stature and earning opportunities of our combined 3000 employees. Each and every member of the Spector—Mid-States family bears a greater responsibility than he did before. In every instance, our people have and will continue to have priority of opportunity to move up into better or newly created positions as their abilities warrant.

Another reason—our resources. In combining the substantial cash, capital and credit resources of our separate firms, we are able to make major additions and improvements in our terminal facilities and fleet (already in excess of 3500 units). We are able to devote a full complement of our time and money to research and development in all segments of our enterprise. No individual company, without the considerable volume that is being developed through this merger, could hope to provide the required minimum investment in research so necessary to the continuing improvement of our customer service.

Spector—Mid-States

Spector—Mid-States is authorized to serve points in all of the 48 states, with *direct service* between 15 of America's top 20 industrial and commercial markets. Our more than 15,300 miles of inter- and intra-state highway routes provide a virtual blanket coverage of the North and Central East and Middle America. (It's interesting to note here that, while less than 25 percent of our total tonnages were derived from common sources, 85 percent of our highway mileages travelled were over common routes. This fact promises an unparalleled opportunity for the maximum utilization of our equipment, particularly of temperature controlled, open-top, flatbed and container units.) Our terminals number 28, are located in: Albany, Aurora, Baltimore-Washington, Boston, Bridgeport, Buffalo, Chicago, Cleveland, Decatur, Eau Claire, Indianapolis, Kansas City, Milwaukee, Minneapolis-St. Paul, Newark, New Britain, New York, Peoria, Philadelphia, Providence, Rochester, Rockford, St. Louis, South Bend, Springfield, Topeka, Wichita, Worcester.

Yes, now we are one . . . and we are proud. Proud and privileged to be a part of an American dream in the making. We are thankful for the opportunity to grow and live in a day and a place where frontiers never cease to beckon.

• • •

W. "Stan" Stanhaus, one of the youngest major industrial leaders in America (age 40), joined the Spector organization seventeen years ago. He rose through the ranks from a member of the accounting department to general manager in 1951, was elected to his current position four years later, in 1955. Stanhaus' early education is traditional Americana: he traveled seventy miles daily after a twelve hour night shift in the coal mines of New Baden (Illinois) to attend business school in St. Louis. An authority on freight transportation, he inspired many of the firm's now-accepted innovations. Stanhaus, his wife Mary and their three children live in suburban Glenview, Illinois.

Cecil Vernon, formerly president of Mid-States Freight Lines (since 1944) and now principal operating head of the merged Spector—Mid-States operation is one of the most colorful figures in American transportation. It was principally through his efforts that the Mid-States firm was founded in Kansas City in the mid-thirties and flourished (after his purchase of and amalgamation with the Evans Truck Lines in 1938) into one of the nation's leading common carriers. Vernon, 48, his wife and two children make their home in Hinsdale, Illinois.

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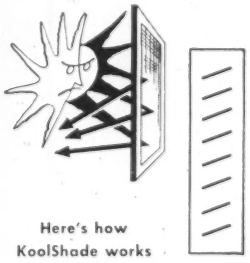

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big business makes a mistake, it can make a whopper, as several recent mergers indicate. Big business has certain advantages in research and marketing, but even here the small business with agile management can and does compete successfully. A good example of mental alertness in small business is demonstrated in the article, "Hi-Fi: Big Business for Small Business," in the current issue.

• The executive meeting is usually as good or bad as the chairman and his agenda. Some executives and supervisors waste time by their individual devices, but a meeting can be a wholesale waste of executive effort unless it is properly planned, timed, and paced. The chairman controls these three basic elements; and if he is inept, the cost in executive time is substantial. Hugh A. Gyllenhaal says top-level executives spend 40 to 65 per cent of their time at meetings, and he offers a program for making these meetings consistently productive for all concerned. His six cases should be reviewed by any executive who plans meetings or swings a gavel, for he shows how to get committee participation, with control of the extrovert and encouragement of the cautious or timid.

• In an article which we will publish soon, "How *Not* to Get Product Publicity," Philip Siekman uses the reverse English approach that C. S. Lewis employed in the stimulating *Screwtape Letters*. Readers will note some similarity between the Siekman and Lewis approach, because getting product publicity past the editor's desk is as difficult as getting past the Pearly Gates with a questionable record. A shrewd editor has a nose for news, as well as a keen scent for phony publicity that struts rather than informs. Much of this pretense lands promptly in the circular file.

• Our appreciation is offered to the transportation specialists who attended the DUN'S REVIEW AND MODERN INDUSTRY roundtable conferences at The Union League Club in New York on February 25 and at the University Club in Chicago on March 12. From these springboards came many ideas offered in the common cause by shipper and carrier executives, suggestions which are reflected in the Extra Emphasis Feature on Transportation in this issue.—A. M. S.

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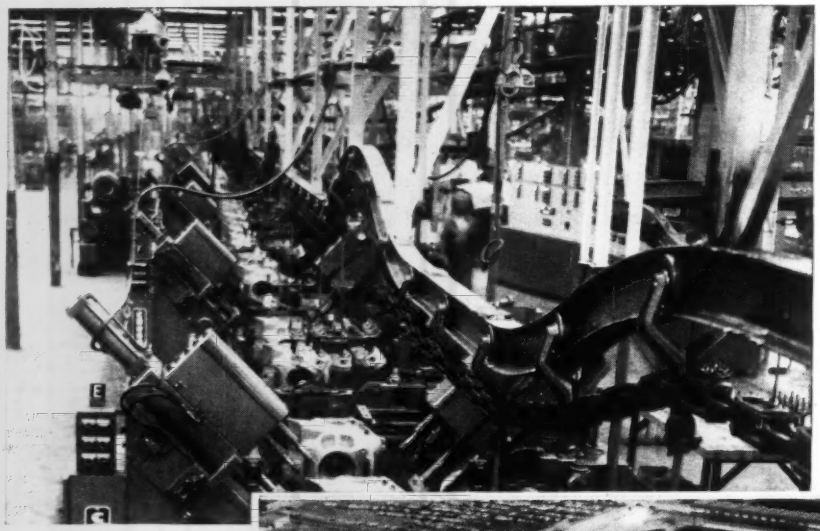

(Above) View of Plymouth Engine assembly line

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ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

DISAPPOINTMENT over the budget came to a head at the annual meeting of the Chamber of Commerce of the United States. The disappointment was keener because most of the organization's members are supporters of the Administration. Defense Secretary Wilson's terse comment about "squawks" from the rich made a greater impression on the public than did the high-sounding slogans of the meeting: "Unleashing the Creative Energies of the People," "Dynamic Conservatism," and "Progressive Moderation."

The storm of criticism aimed at the budget provided a made-to-order setting for Vice President Nixon's admonition not to advocate shortsighted cuts in costs that might mean increased defense spending later and his assurance that "every effort is being made to explore and put into effect methods of operation that will provide services to the public at lower costs."

Nixon took issue with claims to the effect that "the Administration is gleefully giving away $4 billion of taxpayers' money to undeserving foreigners." In that he was backed up effectively by Democratic Senator John F. Kennedy of Massachusetts.

This Administration is as much against government-in-business as anyone, but it is having bad luck in trying to make its policies on the question effective. Clumsy handling defeated the effort to limit the expansion of TVA. Now the rapid write-off allowed private enterprise seems to have given new life to public power at Hell's canyon. A more far-reaching struggle to keep Government from monopolizing atomic energy is in progress. Such control would ramify into all uses of power, industrial and otherwise, and put the Government in business in a big way.

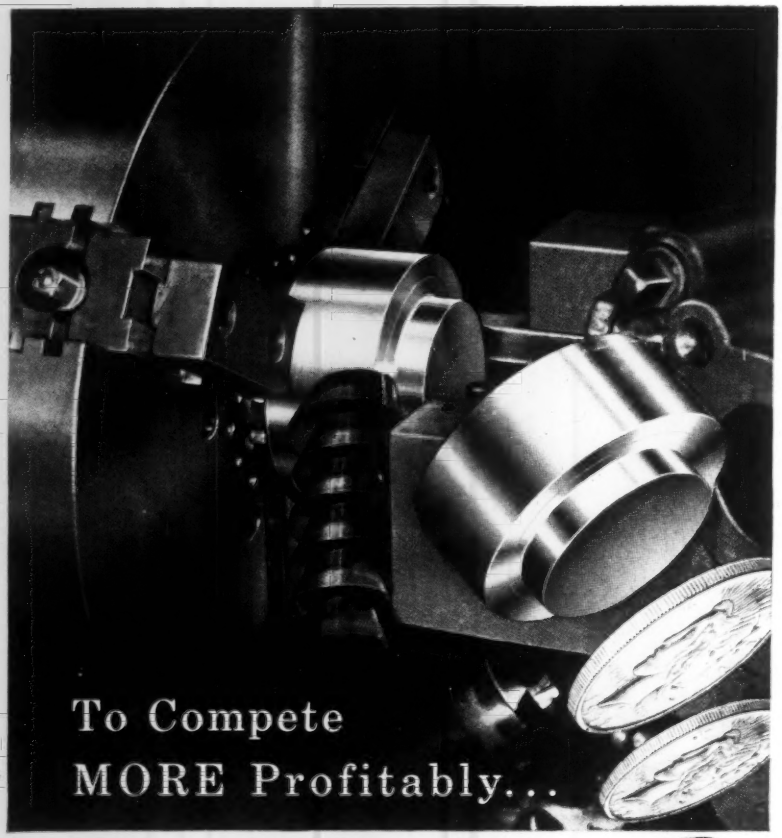
Because of its bearing on political situations and policies, Washington is peculiarly interested in the economic outlook. As statistics and reports flow into Washington, they are scrutinized for clues as to what the future has in store. Interpretations in some cases are expressions of wishful thinking, but the basic data are subjected to intensive sincere study.

Conclusions vary widely. Some see indications that 1957 will be a better year than 1956. Others think the crest has passed and a downturn is under way. There are myriad intermediate views. Here are some of them:

The economy is moving sidewise at inflated price levels. Squeezes on profit margins show no signs of abating. Consumer expenditures are increasing. What is not being spent on automobiles and housing is being saved or is going increasingly for nondurables and services. Buying for inventory has leveled off, and this reflects a tendency on the part of industry to mark time. Less overtime is being paid. Average weekly earnings have declined. There are signs of consumer resistance to price increases. Appropriations for the fiscal year to end June 30, 1958, are expected to total $70 billion. Receipts may not be sufficient to prevent a deficit. At the end of the year the gross national product is expected to attain an annual rate of $440 billion. The economy will be stimulated in advance by the prospect of a tax cut next year. It is expected that at least $2 billion then will be poured into the economy by tax reduction. When the economy is at a high level, it does not take much of such dosage to stimulate business. A tight labor market for the remainder of the year is foreseen.

Advocacy of tax reduction at this session of Congress is being criticized for holding out false hope to those unfamiliar with the Treasury position. An increase in the exemption from $600 to $700 would reduce receipts by $2.5 billion, or more than is collected from those in the 60 per cent bracket. The rates in the higher brackets already are so high that they hardly could be raised enough to cover the revenue loss of the $100 increase in the exemption. The hope is that receipts will justify a cut next year. Corporation taxes already are so high that debt rather than equity financing is being encouraged.

Congress looks with favor on the recommendation that research expenditures in connection with agricultural surpluses be tripled. The Presidential commission that made the recommendations thinks industrial uses of farm products can be expanded greatly. Many bright minds from industry, members of task forces, have made hopeful suggestions concerning the lines an all-out research program should follow. The commission takes note that larger capital requirements are bringing



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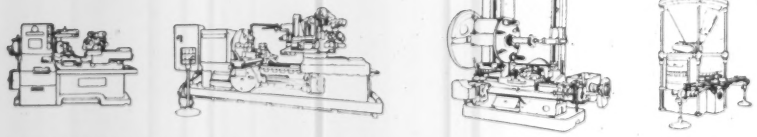
You can't reduce wage scales, material costs, power rates or taxes . . . but you *can* investigate Potter & Johnston Automatics now. Teamed with time-saving P&J-Engineered Tooling, these machines have everything it takes to increase production, improve work quality, shorten machining time, and reduce costs by providing divided labor charges. Write today for complete information . . . there's a P&J Automatic for every work size requirement. Potter & Johnston Company, Pawtucket, Rhode Island.



AUTOMATIC TURRET LATHES . . . GEAR CUTTERS . . . GILDA PACKAGING MACHINES.

P&J **POTTER & JOHNSTON**
SUBSIDIARY OF PRATT & WHITNEY COMPANY, INC.
PRECISION PRODUCTION TOOLING SINCE 1898

about a revolution in agriculture. Plans envisage many pilot plants in different areas. If recommendations are adopted, it would mean a new source of research funds for land grant colleges and organizations having research facilities.

Installment credit if kept within reasonable bounds, all agree, is a desirable stimulant to business. Officials are pointing out, however, that over-extension of it is an unsettling factor. One of the principal reasons seen for the decline in demand for automobiles is the credit policies of 1955. No one likes to be in debt. People get quite tired of debt when it hangs over them for three years. Other explanations being put forward for the lag in automobile buying are: the price level, the realization that tax is a large element in price, and the prospect of radical changes in the design of 1958 cars.

Notwithstanding the high level of personal income, garnishment proceedings have reached an all-time high. Authorities note that those who offer the easiest terms are those who are the most hard-hearted in dealing with delinquents. Illnesses and deaths do not deter them from rushing into court in order to attach wages. Reprehensible practices are not confined to the dollar-down group. There is nothing patriotic in saddling persons with 30-year debts when it is apparent that the chances are that the deal is beyond the means of the purchaser.

A study by the Koppers Company has aroused much interest among legislators who are being pressed to take a position on issues involving labor and management. A recommendation growing out of the study is greater resort by management to the printed word in disseminating its philosophy. This is held to be:

"The economic system of employers has at its core the conviction that increasing government controls and interference can hurt both industry and workers; that lower taxes in the top bracket and a broader base for carrying the costs of running America will lead to the greatest prosperity for all; that there is no way in

Introducing the revolutionary new Pitney-Bowes Mail Inserting Machine

Collates and nests enclosures; opens and stuffs, counts, seals and stacks 6,000 envelopes per hour! An optional postage meter machine provides simultaneously preferred metered mail postage—first or third class; or alternative postage. Handles up to four enclosures; accessory equipment for special requirements. Backed by Pitney-Bowes famed postage meter service, coast to coast!

● THIS NEW PB Model 3100 Mail Inserting Machine gathers, nests and stuffs in envelopes as many as four assorted enclosures... closes, seals and counts the envelopes at speeds up to 6,000 an hour. With a single operator, it has the capacity of eight experienced workers!

● The "3100" does away with costly, tiresome stuffing by hand... stops the diversion of office people from their regular tasks, minimizes costly overtime, and hiring extra temporary workers ...permits the accurate scheduling of mailings, and a far wider use of the mails to promote your product or service.

● Users report savings up to $7.00 per thousand pieces! Even with only occasional use, the "3100" shows *substantial* savings.

● Fastest inserting machine made, it is also the most accurate, automatically detects errors before envelopes are filled. Highly dependable. User-tested for five years. Some machines have processed more than 15 million mailings!

● The "3100" can be easily set for any job in a few minutes—all controls are at operator's fingertips. Its trouble-free friction feed handles widest range of sizes in envelopes and enclosures, including billings and bulletins, tabulating cards and checks, direct mail advertising of all kinds.

● The "3100" is saving time and money for hundreds of companies. Even if you have only one major mailing a quarter, you should still investigate the "3100". For a demonstration, call the nearest PB office, or send coupon for free literature and "case studies" of actual savings.

PITNEY-BOWES, INC.
1550 Crosby Street,
Stamford, Conn.

Send illustrated booklet on the Model 3100 Mail Inserting Machine

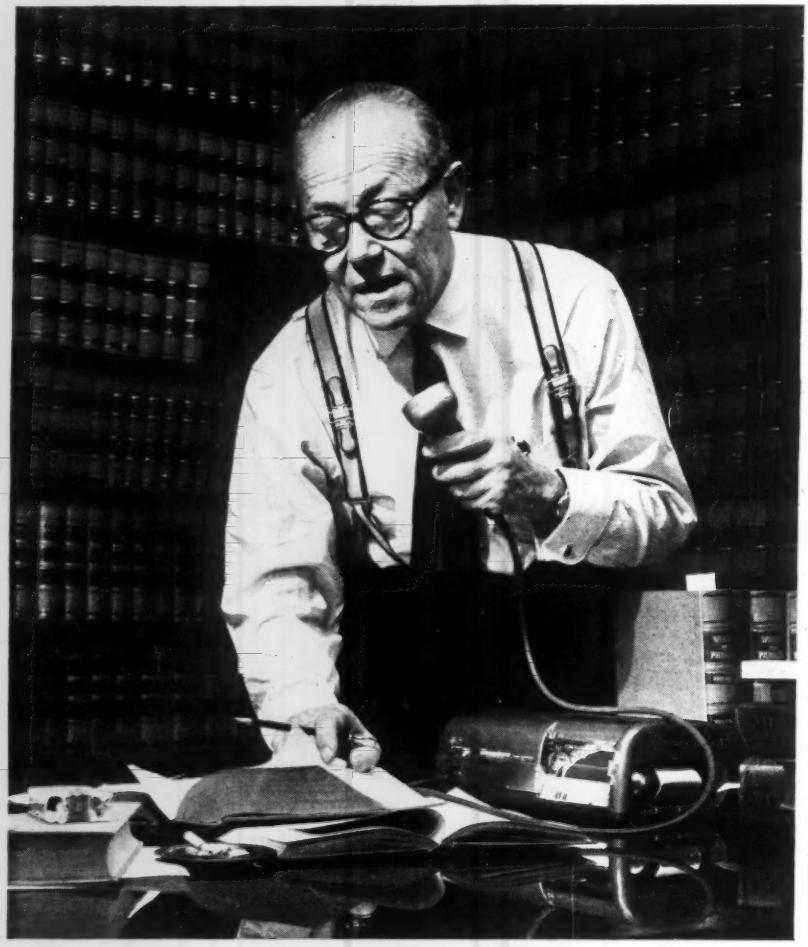
Name _____

Address _____

PB

Pitney-Bowes

Originators of the postage meter. Leading makers of mailing machines. 102 branch offices, with service coast to coast in U. S. and Canada.



Research is easier

with the Dictaphone Time-Master and Dictabelt Record

EASIEST way to dig for facts: make "talking notes" with the Dictaphone TIME-MASTER dictating machine.

Same thing's true of *all* paper work. Pick up the mike—think out loud. Instantly, work's off your mind—and on Dictaphone's exclusive DICTABELT record. DICTABELTS are flexible, filable, unbreakable, mailable as letters.

Recording is visible so you can't lose your place . . . permanent, so dictation can't be changed.

Call your local Dictaphone office for a TIME-MASTER demonstration, or write Dictaphone, Dept. B, 420 Lexington Ave., New York 17, N. Y.

The Dictabelt record—main reason why the Dictaphone Time-Master far outsells all other dictating machines.

DICTAPHONE CORPORATION

Service you can depend on the world around

In Canada, write Dictaphone Corporation, Ltd., 204 Eglinton Ave. East, Toronto . . . In England, Dictaphone Company Ltd., 17-19 Stratford Place, London W.1. Dictaphone, Time-Master and Dictabelt are registered trademarks of Dictaphone Corporation.

which either jobs, wages, or benefits can be guaranteed if sales are not made and profits are not earned."

Labor ideology is interpreted in this way:

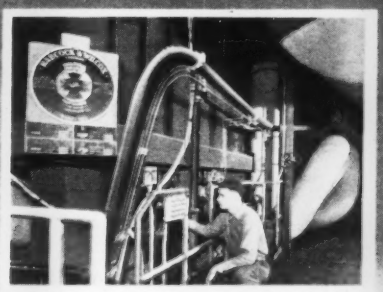
"The economic system of the unions is built around a desire for government regulation and protection; for high taxes on high incomes and on business, and high exemptions and low taxes on low incomes; for guaranteed jobs and wages; for an increasing employer responsibility for worker income, welfare, and retirement, regardless of cost."

The study revealed that labor is making much greater use of the printed word in arguing its philosophy.

Legislators usually are slow to move in matters distasteful to organized labor. Revelations growing out of the Senate hearings, however, are not likely to be ignored by the law makers. A reappraisal of the labor situation already is under way. Was it the intent of Congress to exempt labor unions from the antitrust statutes? Even that question is being raised. Public confidence in labor leadership has been undermined. Some of the same doubt pervades union members themselves. Those working for right-to-work laws in the states have been encouraged. While passage of a Federal right-to-work law seems unlikely, there is strong feeling in Congress that acceptance of union domination in order to have a job comes close to an authoritarian concept.

Speakers at the recent conclave staged by the Democratic National Committee and the new advisory council flailed out against President Eisenhower, but in the end their proposed changes dealt with minor matters. No changes in the more important Administration policies were suggested.

Clamor for change in Federal Reserve policy brought a recent pungent rejoinder from the Board's chairman, William McChesney Martin. Do we want to change a policy, he asks, that fosters high levels of business and maximum employment; that endeavors to maintain the stability of the dollar; that provides for the



B&W Universal Pressure Steam Generator at Philo Plant is fired by B&W-developed Cyclone Furnaces for complete combustion of coal and minimum fly ash discharge.

First commercial Supercritical Unit is on the line at Philo Plant of Ohio Power Company on American Gas & Electric System.

A MAJOR BREAK-THROUGH FOR ECONOMICAL ENERGY

Supercritical Pressure Unit in Ohio Probes New Frontiers in Power Generation

Generating history is being made at the Philo Plant of the Ohio Power Company on the American Gas & Electric System. Here, America's first commercial supercritical pressure steam-electric unit is in operation, probing the frontiers for new economies in the production of energy.

A Symbol of the Vision and progressiveness of America's public utilities and their suppliers, Philo is a landmark in engineering history. It is the result of years of engineering, research, and development that solved the many problems which had stood in the way of greater plant efficiency that comes with the highest possible combination of pressure and temperature.

The Problems Solved included the very difficult ones of feedwater chemistry, of heat transfer and control of internal deposits, metallurgy for higher temperatures combined with higher pressures, and development of control and operating techniques.

Philo's Supercritical Unit, with a turbo-generator operating at 4500 psi and 1150F, is producing over 120,000 kw, in the same space and using 45 per cent less fuel per kwhr than the 40,000 kw unit it replaced.

Two More B&W Universal Pressure Steam Generators are now being built for the American Gas & Electric System. Together these will produce 900,000 kw—enough to supply residential power for a city of 8,000,000. Like Philo, they will continue to push forward this new frontier in steam generation.

Nearly a Century of B&W leadership in steam generation stands behind these achievements. The Babcock & Wilcox Company, Boiler Division, Dept. DR-6, 161 East 42nd Street, New York 17, N. Y.

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BOILER DIVISION

MODERN STEAM SERVES YOU IN MANY WAYS AT LOWER COSTS

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"The Bank" is *part* of Canada — *every part of it* — and with 470 branches coast-to-coast is not only able to get you off to a good start . . . it is able to help in many ways after you are established.

Looking for Canadian distributors? Need Canadian customs data? Want facts and figures on Canada's growing markets for what you sell? Take full advantage of the many business-building services of The Toronto-Dominion Bank. We are ready to go to work for you *now*.

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sustained growth of the economy; and that combats inflation and deflation alike? Inflation, he declared, compounds cruelties by paving the way for cyclical progression, "which is heavy in human hardship." He cites Benjamin Franklin's admonition against too much money. When Franklin's advice was not followed the currency of his day depreciated to the point that the expression "not worth a continental" became common usage.

Another $2 billion year is forecast for the construction machinery and equipment industry. It had been hoped that 1957 would be better than 1956, but bad weather, rights-of-way delays, and the shortage of engineers have slowed down plans of highway contractors. Financing of machinery purchases is becoming easier. A big year in 1958 is predicted.

When the present unusually large proportion of the population in the teenage bracket reaches the family formation stage in the early 1960's, present manufacturing capacity cannot supply their needs. The Commerce Department sees in that emerging market one reason why plant and equipment expenditures continue at a high level.

Even that portion of the labor force which has had wage increases has had no resulting increase in its standard of living; prices have gone up by nearly the exact amount of the wage increases. At the same time there has been practically no increase in productivity. And many persons received no increase and are thus worse off.

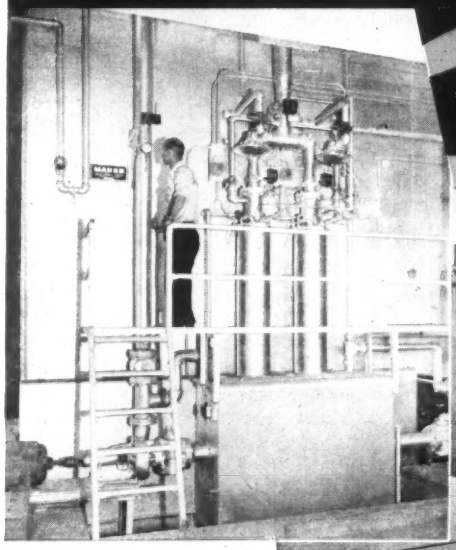
Interest rates will be an issue in next year's political campaign. The Administration takes the position that present rates are reasonable when the volume of demand is considered. Those now in office are determined to resist depreciation of the dollar. They are not being influenced by some easing of the situation.

Paul Wooton

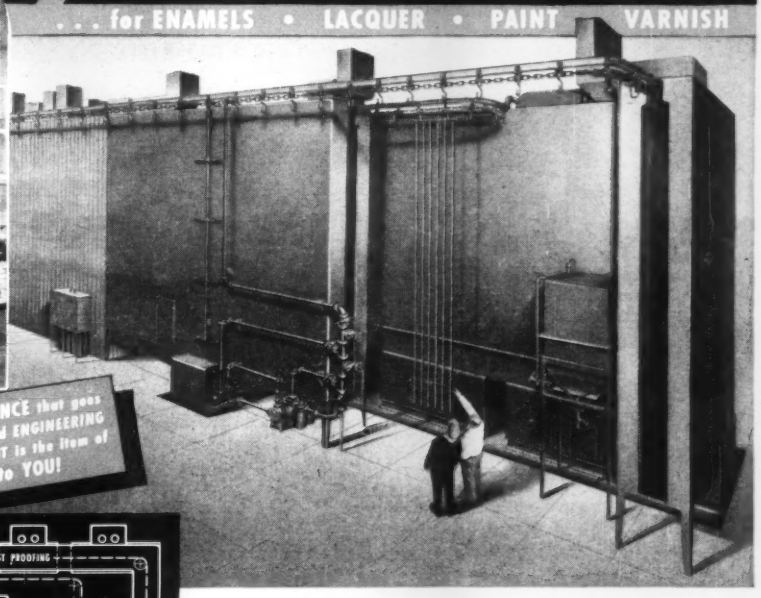
WASHINGTON, D. C.

COMPLETE *Finishing* SYSTEMS

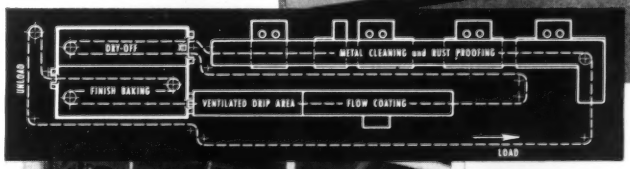
. . . for ENAMELS • LACQUER • PAINT • VARNISH

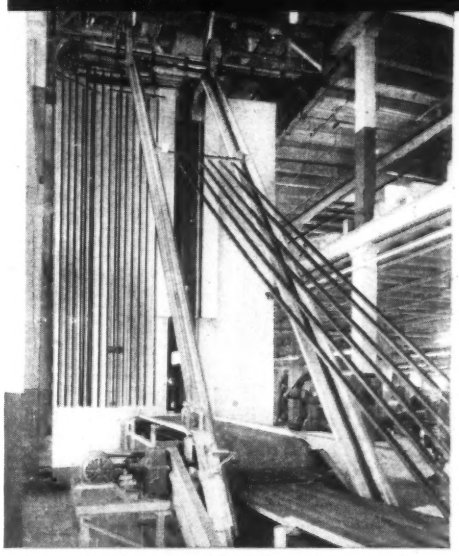


Mahon FIRE-JET Heating Units on the solution tanks of Mahon Five-Stage Metal Cleaning and Rust Proofing Machine—part of the Complete Mahon Finishing System at MULT-A-FRAME Division of Ainsworth Manufacturing Corporation, Detroit, Mich.



. . . the EXPERIENCE that goes into the PLANNING and ENGINEERING of MAHON EQUIPMENT is the item of GREATEST VALUE to YOU!





Exit end of Mahon combined Dry-Off and Finish Baking Oven showing Automatic Unloading Conveyor Ramp and Belt Type Handling Conveyors on the first floor at the Ainsworth Plant.

Ainsworth MULT-A-FRAME Channels are Painted in MAHON EQUIPMENT!

When the MULT-A-FRAME Division of Ainsworth Manufacturing Corporation was confronted with a finishing problem, they turned to Mahon for the solution. The product is a box channel 20 ft. long with only a ½" slot in one side—these are cleaned, rust proofed and painted outside and inside. Two hundred channels are finished per hour. Thousands of Fittings, Concrete Inserts and other MULT-A-FRAME parts and accessories are also finished on the same line. The finishing equipment extends from a pit in the first floor to the second floor ceiling. Oven Heating Units, Recirculating Fans and Exhaust Fans are located on the third floor. Automatic loaders and unloaders, with ramp conveyors from the first floor, load and unload the main conveyor which is located 27'-5" above the first floor. This is another Complete Mahon Finishing System designed and built by Mahon to do a specific job efficiently and economically. If you have a finishing problem, or are contemplating new finishing equipment, you will find that Mahon engineers are better qualified to advise you on both methods and equipment requirements . . . better qualified to do the all-important planning and engineering of equipment—which is the key to fine finishes at minimum cost. You will also find that Mahon equipment is built better for more economical operation over a longer period of time. Mahon's background history in this highly specialized field covers thousands of Complete Finishing Systems including Dip, Flow Coating and Spray Equipment for every conceivable product painted on a production basis. See Sweet's Plant Engineering File, or write for Catalog A-657.

THE R. C. MAHON COMPANY • Detroit 34, Michigan

SALES-ENGINEERING OFFICES in DETROIT, NEW YORK and CHICAGO

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning, Pickling and Rust Proofing Equipment, Hydro-Filter Spray Booths, Dip and Flow Coaters, Filtered Air Supply Systems, Drying and Baking Ovens, Cooling Tunnels, Heat Treating and Quenching Equipment for Aluminum and Magnesium, and other Units of Special Production Equipment.

MAHON

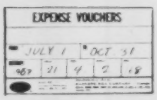
easy solutions to RECORD STORAGE PROBLEMS

Problem: How to store **original** records for future reference at lowest possible cost.
Answer: Liberty Record Storage Boxes—for over thirty-eight years recognized by industry as the lowest cost method for housing inactive records.

Liberty STORAGE BOXES

Heavy-duty corrugated fibre-board construction gives ten, fifteen, twenty years of service and cuts costs way down. Just pennies a year does the job!

Liberty INDEX SYSTEM



Factory applied labels with gummed title strips a Liberty Box feature.

Liberty Boxes provide for "fast finding" of stored records because of its unique label design. The Liberty label assures you a simple, easy-to-use method for indexing and filing your transferred records.

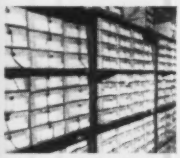
Liberty FEATURES

C. & N.W.R.R. file room is both neat and efficient.

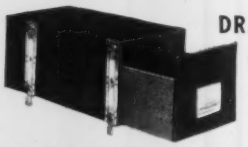
Your records are always protected against dust, dirt and dampness due to the unique cord and tension button closure. If accidently dropped, the contents can't spill out. 25 stock sizes available covering every popular office form—special sizes to order.

Liberty USED AND SOLD FROM COAST TO COAST

Liberty Boxes are stocked by stationery and office equipment dealers in every state, in every principal city. Write for the name of your dealer and a copy of our latest catalog. No obligation, of course.



Low cost installation at Southwestern Bell Telephone



DRAWER STYLE TRANSFER FILES

STAXONSTEEL Transfer Files build their own steel framework as they are stacked—no shelving required. Easy gliding drawers at any height. Available in Legal, Letter, Check, Freight Bill and Tab Card sizes.

BANKERS BOX COMPANY
2607 North 25th Avenue • Franklin Park, Ill.

HIGHLIGHTS *and sidelights*

comment by

Hannesta R. Gardner

Industry's billionaires

It looks as though manufacturers were standing behind the door when the big assets were handed out. Of the 80 independent companies now in the billion-dollar class, less than a dozen are manufacturers.*

Even counting the oil companies, only 21 of the 80 supply products of any kind. The rest are service companies—utilities, banks, and the like.

The fact that a company does not have a billion or more in total assets is not necessarily a bad thing, of course; large assets may also mean big overhead and, in many cases, a lack of flexibility. But, if you *do* want your company to be a billionaire, look to the service industries. On the basis of past performance, that's the best way to reach the goal.

*The golden group: General Motors, U.S. Steel, Du Pont, Ford, General Electric, Bethlehem Steel, Union Carbide, Chrysler, Westinghouse, Alcoa, International Harvester.

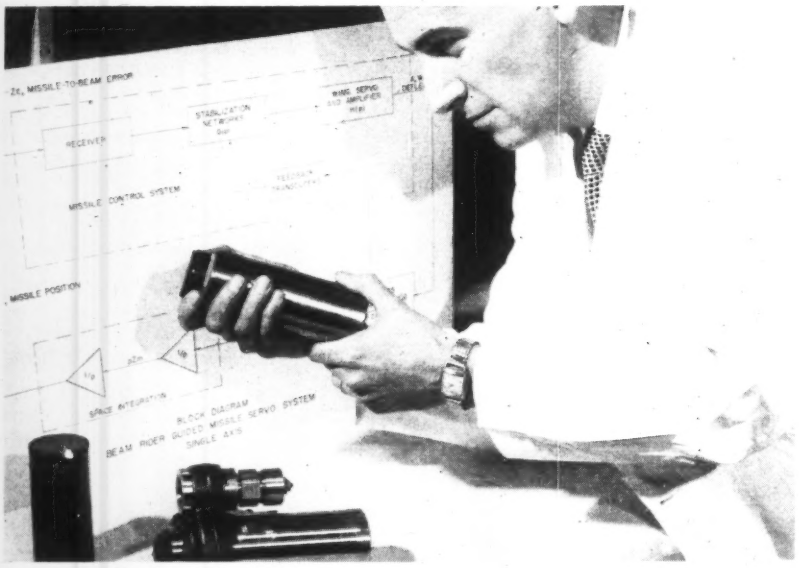
New punch in production?

As a portable, controllable, low-cost power source, gunpowder has few equals. Yet, though it is one of the oldest man-made power sources, and one of the most convenient to use, it has made little headway as a manufacturing tool. True, there are explosive rivets and powder-actuated stud drivers. But these are the exceptions that prove the rule.

Manufacturing industry has virtually ignored explosive power. Why? The reasons are not hard to find: the problem of noise; the fear of accidental ignition; the fact that explosive power is an intermittent rather than a continuous force.

Now, though, the demand for ever more complex parts in tougher, harder-to-work metals is forcing reexamination of every possible production tool, and explosives are getting a new look.

At Lockheed Aircraft, for instance, explosive metal-forming tools using everything from .22-caliber rifle car-



Research in high-energy fuels may pave the way for broader, more efficient use of explosives in industry. Here, Sperry Gyroscope technician inserts cylinder of solid propellant into gas generator. Sperry is also testing explosives of this type for mechanical actuators, arming devices, and gyroscope drives, and is planning tests on liquid propellants as well.

another FORD first

MERCURY STATION WAGON PLANT, WAYNE, MICHIGAN. DESIGNED AND CONSTRUCTED FOR FORD MOTOR COMPANY BY CUNNINGHAM-LIMP COMPANY. This is the first plant in the auto industry devoted exclusively to station wagon bodies. It is but one of the projects allotted by Ford to Cunningham-Limp. Other Ford plants being constructed only by Cunningham-Limp are at Indianapolis; Birmingham, Mich.; St. Louis; Livonia, Mich.

Another project by
CUNNINGHAM-LIMP
GENERAL CONTRACTORS
Detroit, Michigan • TRinity 3-4000

Nationwide — SERVICE • QUALITY • SPEED

Ask the owners on any project where you see this sign how they like the way Cunningham-Limp does business.

The versatile building experience which developed its design and construction is available to you through Cunningham-Limp

You can determine the contractor to design and construct your next building project the same way you choose your other suppliers—check their reputation! . . . It was our good fortune that led Ford Motor Company to select us for this project, noteworthy mainly, because Mercury is the first in the industry to devote an entire plant to station wagon bodies. Good fortune, yes, *but not luck!* Ford is a careful, cost-conscious buyer of engineering and building services as well as of everything else they buy. They must be to deliver such good values in their end product—the Ford Family of Fine Cars. Cunningham-Limp does have a well-earned reputation for giving a full dollar's value for every dollar spent for construction!

The successful completion on schedule of this Ford plant and the progress made on other Ford projects tend to prove our point—that you, too, can wisely assign the complete responsibility for your next building project to us.

These Services Will Pay Off For You
use but one or all

* Engineering analysis and reports
* Site selection and development
* Plant layout and processing procedures
* In-plant and out-plant materials handling
* Equipment purchase and installation
* Building design and engineering
* Building construction, including:
  - Industrial plants
  - Research laboratories
  - Chemical process plants
  - TV and Radio facilities
  - Power plants
  - Commercial buildings
  - Railroad and Utility facilities

90% of C/L's volume comes from repeat orders!
what that means to you

Isn't it true—that the greatest pleasure you get from a newly purchased possession is the feeling that you have made a wise choice—that you received your money's worth? Therefore, you may want to remember that 90% of Cunningham-Limp's business comes from old customers. Certainly, after a building project of yours has been finished, you could not ask for more than the same glow of satisfaction—to the extent that you would let us build for you again.

"IF YOU ARE GOING TO BUILD" . . . is not the title of the Cunningham-Limp book but it does indicate the import of the contents according to a prospect who wrote " . . . your book would be very helpful to me if I were going to build." The 58 page book attempts to give the layman a basic understanding of how to get a full dollar's value for each dollar budgeted for construction. (For example, there is a section on the advantages and disadvantages of the various types of materials and construction methods for walls, floors and roofs.) However, it is "heavy" reading and frankly says a lot about C L, so unless you are going to build and want a better understanding of the industrial and commercial building industry you may not find it of interest. Please request it on your business letterhead or card. It will be sent by mail—not delivered.

CUNNINGHAM-LIMP COMPANY

Detroit 2, 3087-G W. Grand Blvd. • TRinity 3-4000

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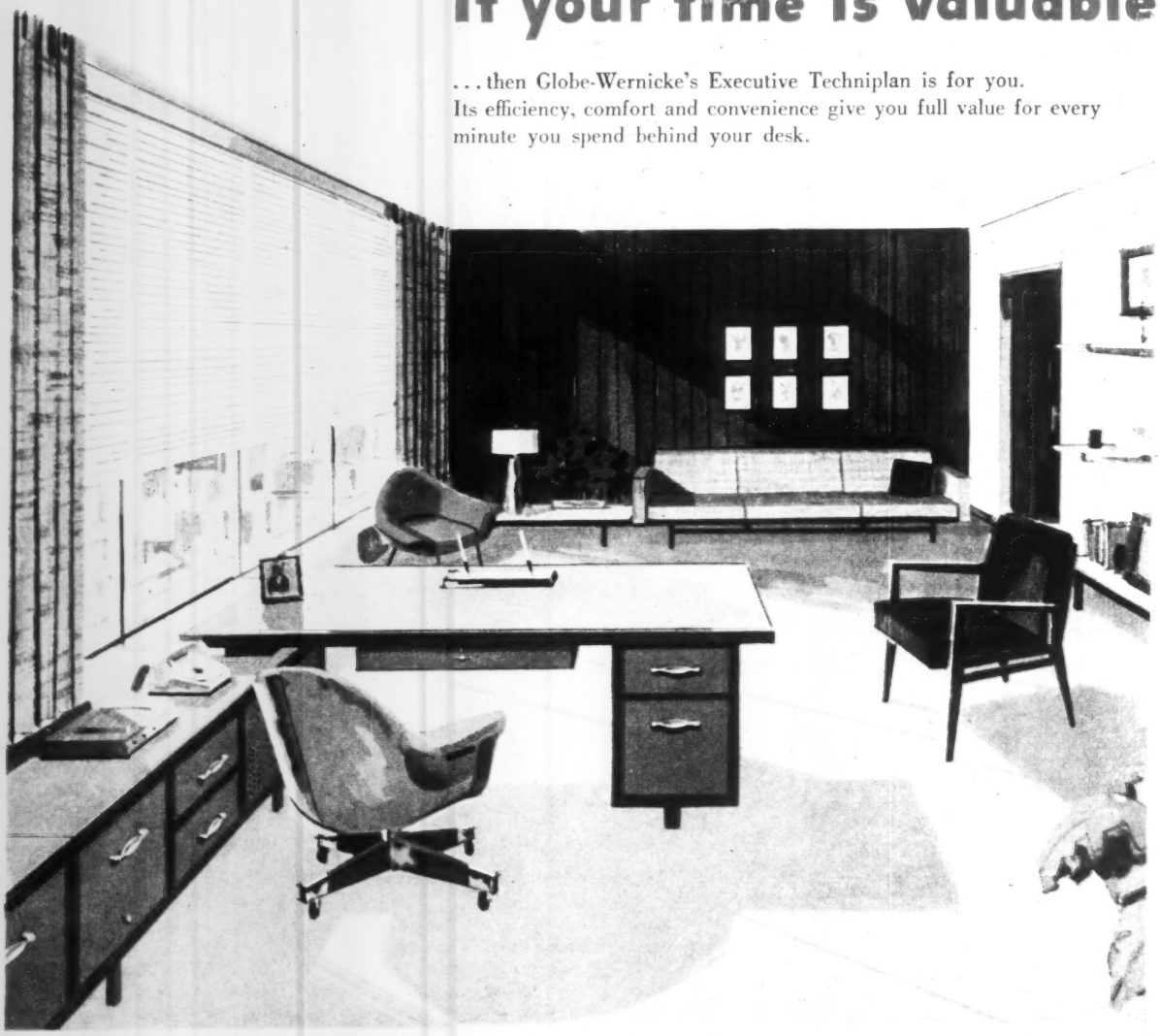
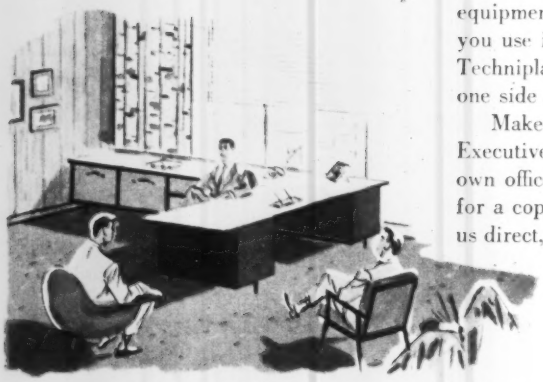
also Cunningham-Limp Company, Ltd., in Canada

If your time is valuable

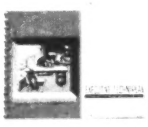
. . . then Globe-Wernicke's Executive Techniplan is for you. Its efficiency, comfort and convenience give you full value for every minute you spend behind your desk.





Executive Techniplan is especially created for men who demand an office that reflects their own good taste. This handsome modular equipment surrounds you with quiet distinction. The arrangement you use is the one *you* design . . . from versatile and functional Executive Techniplan components. Important business tools are marshalled to one side . . . your desk top stays free and clear.

Make business a pleasure. Acquaint yourself with Executive Techniplan's wide range of applications in your own office or company. Ask your Globe-Wernicke dealer* for a copy of our free illustrated brochure . . . or write us direct, Dept. C-6.



*Dealers listed in "Yellow Pages" under "Office Furniture."

GLOBE-WERNICKE

CINCINNATI 12, OHIO

FOR 77 YEARS, MANUFACTURERS OF THE WORLD'S FINEST BUSINESS EQUIPMENT, SYSTEMS AND FILING SUPPLIES

tridges to shaped charges are being tried out on a variety of drilling and forming operations.

At the same time, research on rocket and guided missile propulsion (see photo on page 16) is bringing new data on explosives and propellants that may prove useful to industry as well as to aviation.

It may be some time before these programs begin to pay off, but it's well worth keeping an eye on them.

What are your big problems?

No two industries are alike, of course—and no two companies. Yet some problems spread across many fields. For that reason, an analysis by the Value Line Investment Survey of the baking industry's current problems is worth noting. The Value Line lists these as the twelve most important influences now holding back that industry's sales and profits:

1. Rising wages, powerful unions.
2. Rising or fluctuating material costs.
3. Inadequate price increases, slowly dwindling profit margins.
4. Secret discounts, price fixing.
5. Low quality introduced by marginal producers.
6. Heavier promotional expenses.
7. Heavier research outlays.
8. Heavier investment in trade receivables.
9. Heavier investment in facilities.
10. Growing supermarket distribution of food.
11. Competition from supermarket chain bakeries.
12. Competition from other prepared foods for the housewife's dollar.

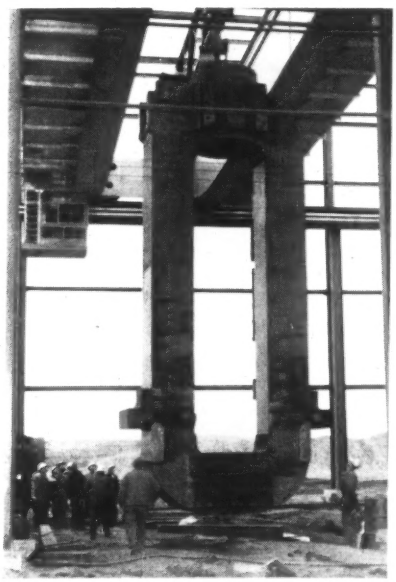
How many of these apply to your business? Chances are, most of them do—particularly if, in the last few questions, you change the word "food" to the name of your own product.

Enter here

A new kind of "open door policy" is being promoted for industry, with doors that move themselves, and air curtains that aren't really doors at all. Air-curtain "Doorless Doors" are now being produced by at least two companies: Sulzer Bros. of New York and American Air Curtain Corp. of St. Louis. Both use a downdraft of air, slow and steady, but hardly noticeable to keep out wind, weather, and insects, while permitting free access to building interiors.

First installations here are in commercial buildings. But the producers believe industrial plants will find "Doorless Doors" desirable as well.

Cost of installation, according to Sulzer Bros. president, Richard Herold, is about $1,000 per lineal foot of door opening. This includes refrigeration, heating and control equipment. A sliding door or some type of



Big lift for aluminum

The first all-aluminum welded crane proves its ability to handle the big jobs in this test at Kaiser Aluminum & Chemical Corporation's new Ravenswood, West Va., plant. Though the crane's rated capacity is only 125 tons, Kaiser engineers say it handled this 203-ton mill housing with ease. (Girder deflection was safely below the amount permitted by the AISE deflection code even when the load was held at the center of its 83-foot span.) Kaiser is installing 14 of these big cranes and several smaller ones in its own plant, believes many others will want them because of their light weight, ease of installation. Cleveland Crane & Engineering, which is building the girders and components, says use of new high-speed welding and cutting techniques keeps construction costs close to those normally expected for steel, and the fact that lighter foundations can be used helps offset higher materials costs.

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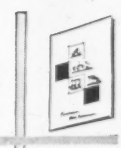
of these and other services.



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WE DON'T NEED THE ADDITION NOW!"

Plant expansion may be a sign of progress — but it is expensive, too. Before your plant suffers "growing pains," investigate Wheelabrator® airless blast cleaning equipment. It not only pays for itself fast in reduced metal cleaning costs, but produces volume cleaning in a relatively small space. With it you can make your production "grow" without adding extra space for cleaning operations.

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Airless **BLAST EQUIPMENT**

closure must, of course, be provided so buildings can be locked up at night.

The doors-that-move-themselves are of more conventional design, but are also aimed at making buildings easier to enter. They're motorized revolving doors, designed by International Steel Company. Normal rate of movement is 3 feet per minute, but a light touch on the push-bar steps it up to 8 feet a minute (normal walking speed), and the impatient visitor can get it going at 12 feet—but no more—if he pushes.

Hiding your light?

So often, traveling along a main highway or railroad, one sees a fine new factory building—and not a sign of who owns it. Or, going through a plant, one is attracted by a particularly efficient machine—only to find it as bare of identification as a freshly scrubbed infant.

Yet it would be so easy to gain added recognition by placing the company name where it could be seen.

There are many ways to keep the company name in the public eye at very little expense—imprinting the name and a slogan on cartons, envelopes, checks, pencils, and premiums; providing lab coats with the company name across the back or over the pocket; molding trade marks into plastic and metal parts. It's surprising these chances are so often neglected.

This kind of promotion can be overdone, of course; but most companies seem to err on the side of too little rather than too much.

How will our industries grow?

How many workers will be employed in manufacturing . . . mining . . . communications in 1975? Will productivity go up as much in the next fifteen years as it did in the last fifteen?

To answer these and a good many other questions about production, Stanford Research Institute made a long-term study of our major industries, and has now published its projections in a 65-page book, *Production Trends in the United States through 1975*, which covers employment, gross product, and related data in a dozen major industry classifications for the years 1929–1975.

Sample predictions:

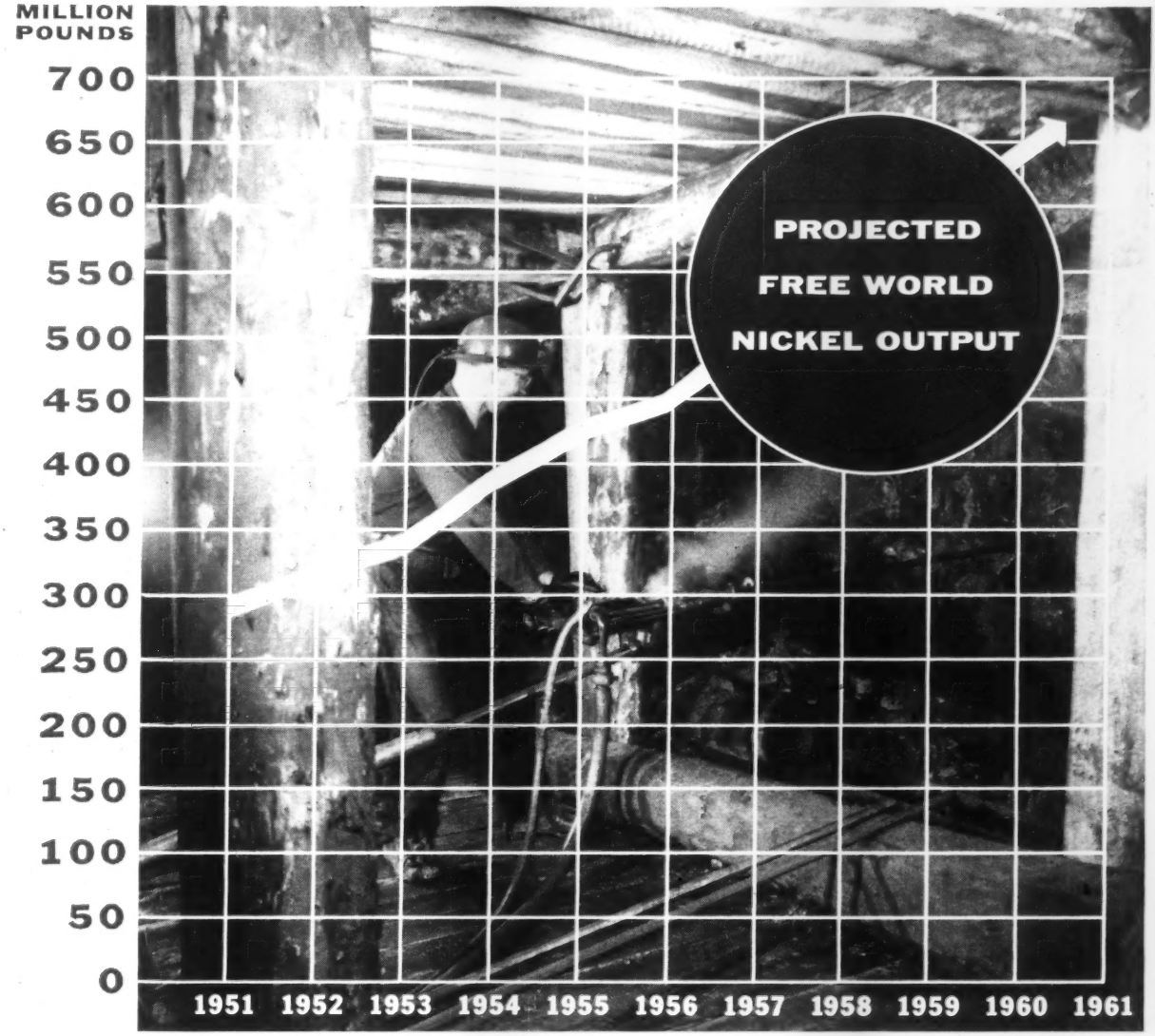
Manufacturing gross product per manhour, now about 2.75, will reach 4.21 by 1975 (both figures in terms of 1947 dollars).

Manufacturing employment, now close to 31 per cent of total civilian employment, will be over 35.5 per cent by 1975.

Copies of the report, priced at $2, may be obtained from SRI, Menlo Park, California.

Automat for automation

Technicians at Reeves Instrument's new gyroscope lab don't have to drop a nickel in the slot to get components they need for assembly and testing. But this revolving rack operates in much the same manner as the cubbyholes in the well-known *Automat* restaurants. Reeves uses this through-the-wall service to prevent air contamination in the rooms used for testing precision parts, and finds the setup saves steps as well as protecting the product. In this particular unit, the revolving section, built into the wall, is barrel-shaped, and has only one opening so that direct air flow between rooms is impossible even if the doors on both sides are left open. Prevention of contamination is by no means the only reason for using pass-through systems in industry. Because they save time and travel, a good many companies use pass-through doors and racks even where air contamination poses no problems—between storage areas and loading docks, and between assembly lines, for instance.



Another 50% advance in nickel industry's production capacity

Paced by Inco-Canada's new developments in Manitoba, producers put 1961 Free World nickel output at 650-675 million pounds a year—up 130% over 1951

In 1951, the nickel industry of the *Free World* produced about 290 million pounds of nickel.

Last year, the over-all output of the industry set a new record high of 450 million pounds.

This was an expansion of more than 50% in five years: a substantial production boost that indeed benefited industry, but only after vital defense and government stockpile needs were given preference.

New Inco-Canada developments help set new goals

Right now Inco-Canada, with years of exploration behind the project, is pushing construction at its new Manitoba mines: developing in the far North a new, big-tonnage nickel-producing area.

In Ontario, at the same time, Inco-Canada is continuing to expand its Sudbury capacity.

In 1961, this should lift Inco-Canada's nickel output to 385 million pounds a year. A hundred million more than in 1956!

With the steadily increasing capacity of all *Free World* producers, in the next four years nickel production should be lifted to the all-time high of 650-675 million pounds a year.

With 1961 capacity anticipated at more than twice what it was in 1951—and with continuing exploration—nickel users are assured of more nickel in their future.

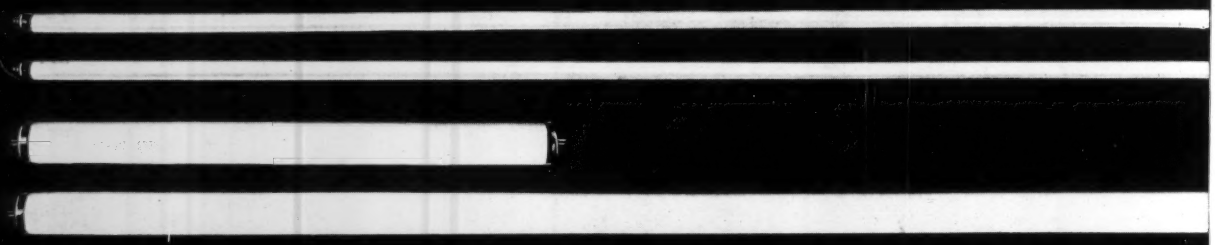
The International Nickel Company, Inc., New York 5, N. Y.

©1957, T. I. N. Co., Inc.

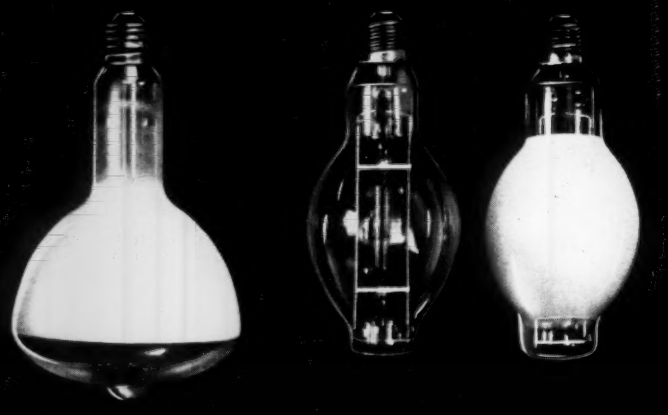
INCO **International Nickel**

The International Nickel Company, Inc., is the U. S. affiliate of The International Nickel Company of Canada, Limited (Inco-Canada)—producer of Inco Nickel, Copper, Cobalt, Iron Ore, Tellurium, Selenium and Platinum, Palladium and Other Precious Metals

FLUORESCENT: over 290 different lamps for business and industry



MERCURY: 62 types from 85 through 3,000 watts



New economy and efficiency in industrial and commercial lighting

Westinghouse Job-

Now you can have exactly the right *kind* of lamp in exactly the right *size* for every individual lighting job

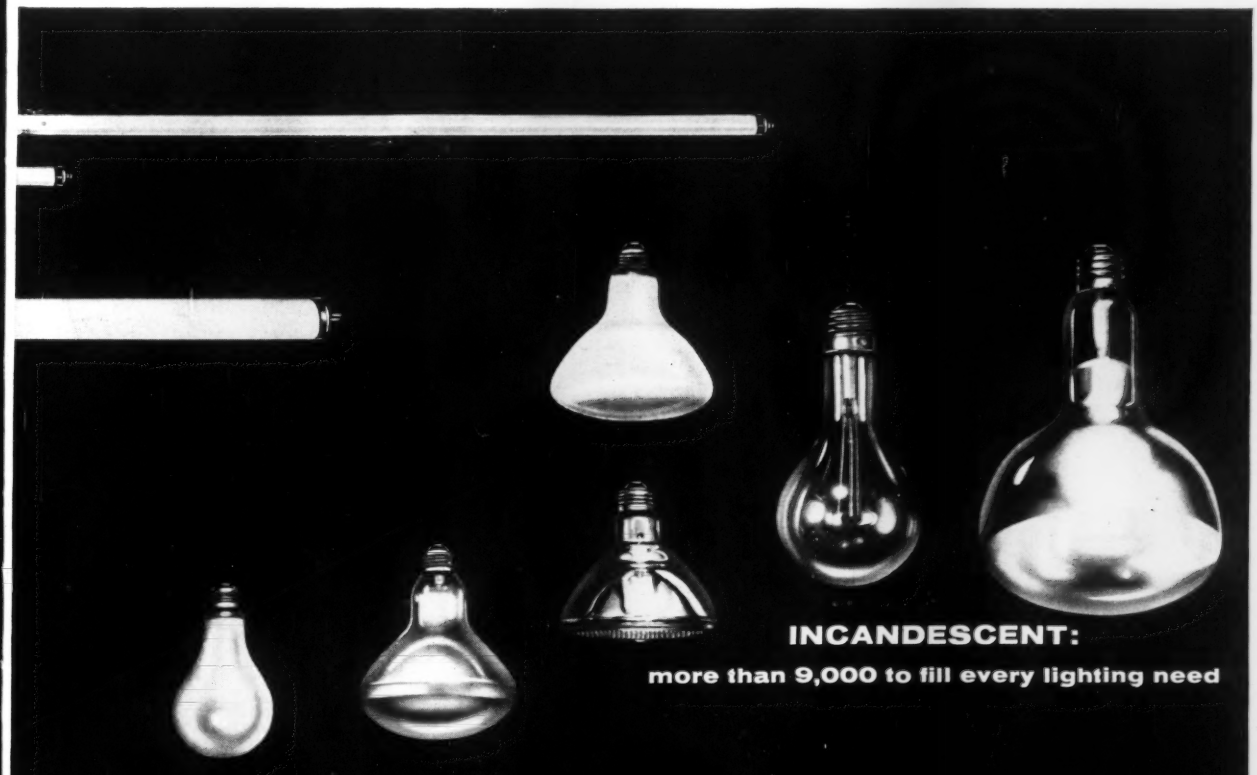
Westinghouse again demonstrates its leadership in lighting with lamps *Job-Tailored* to cut costs, reduce accidents, improve both "See-Ability" and morale. All this is possible because Westinghouse produces more than *10,000 kinds of lamps* with exclusive developments like those below which give you more for your lighting investment.

Fluorescent Lamps, for example, have a new high-intensity phosphor—*Ultralume*™—which gives more lumens per watt plus uniform end-to-end light for the life of the lamp.

Mercury Lamps with special "hard" glass *Weather Duty*™ construction. Can't be harmed by snow, rain, condensation—even without protective coverings.

Incandescent Lamps provide an extra measure of quality with exclusive *Lifeline Filament*™—made possible because only Westinghouse controls the manufacture of filaments from tungsten ore to finished wire.

In addition, Job-Tailored lamps give you more light from existing fixtures. By standardizing on bases, bulb sizes and light center lengths, Westinghouse provides a high degree of *lamp interchangeability*. As a result, with many Westinghouse lamps, you may increase light output to more efficient working and safety levels without changing fixtures.



Tailored Lamps

FREE WESTINGHOUSE JOB-TAILORED LIGHTING SURVEY SHOWS YOU HOW TO GET THE MOST FOR YOUR LIGHTING DOLLAR. To enable you to spot places in your present lighting installations where incorrect lamps may be costing you money, call in a Westinghouse Lamp Representative. With your plant engineer or maintenance supervisor, he will inspect your lighting installation, make a careful analysis of his findings, and report his recommendations. To get this free service, simply fill out the coupon. You'll be dollars ahead with Westinghouse JOB-TAILORED lighting.

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LAMP DIVISION
Industrial-Commercial Lighting Service
Bloomfield, New Jersey

Please have your Lamp Representative in my area make an appointment with our Mr. _____ to arrange a survey of our lighting needs.

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COMPANY _____

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CITY _____ **ZONE** ____ **STATE** _____

FULL NAME OF PLANT ENGINEER _____

PHONE NUMBER _____

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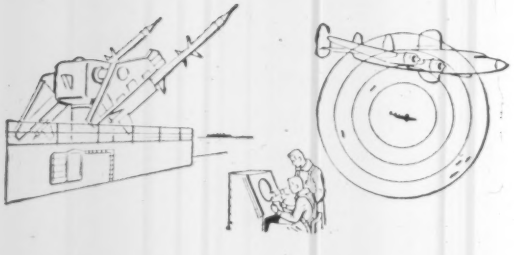
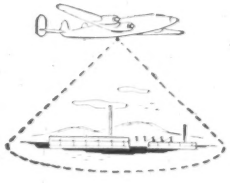
PHILCO® *... sharing in the vast projects of our Armed Forces to safeguard the American way of life through engineering research and development*





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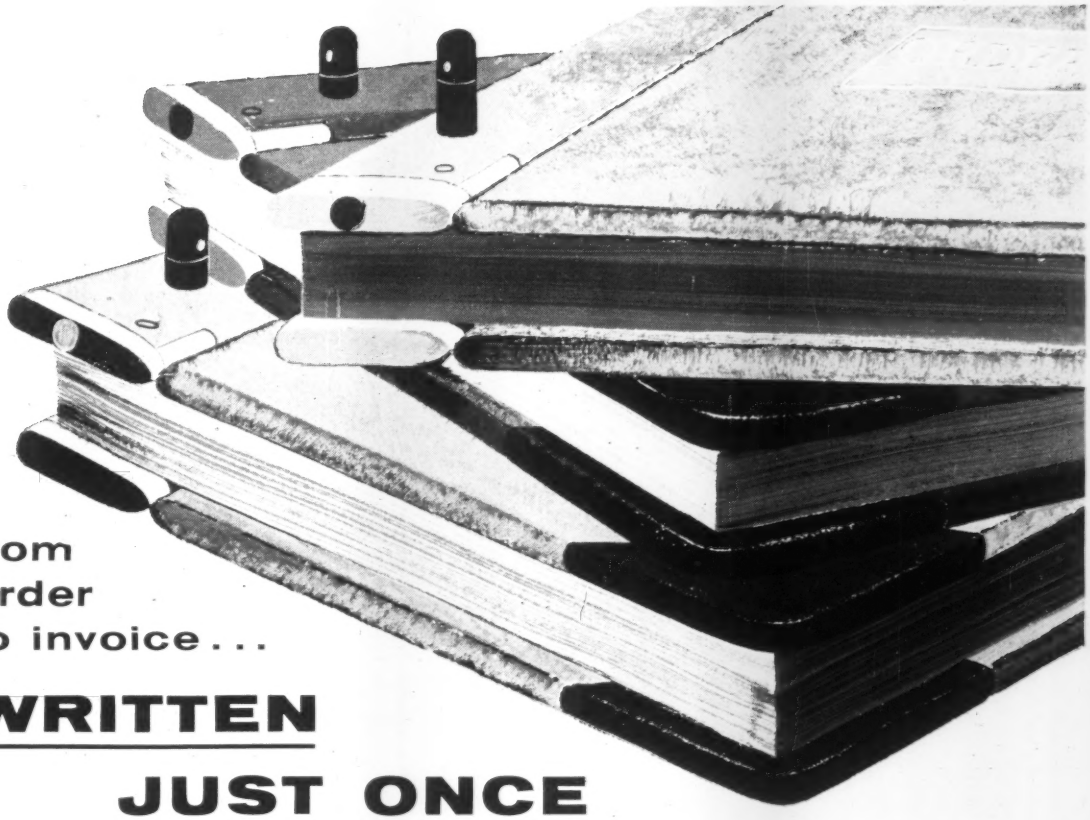

from
order
to invoice . . .

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End costly "repeat writing" every time you fill an order this new Ozalid *Direct Copy* way.

From just *one writing* . . . you get stock tickets, packing slips, accounting control copies, invoice—in fact, *all* your paperwork. As a result, you end costly, repetitious handcopying and retyping . . . eliminate copy errors and proofreading . . . get shipments and bills out sooner . . . improve customer service.

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Making man the master of paperwork

As the business pace accelerates in this year of 1957, paperwork costs are multiplying even faster. The keen competition for clerical workers doesn't help the situation in any way. For some businesses, Underwood automation of paperwork has been the actual means of survival. For many others, the efficiency of Underwood systems has meant an improved profit picture through lower clerical costs, closer management control and improved service to customers. Let Underwood help put you on top of paperwork problems. Call your local Underwood showroom (see Yellow Pages), or write to Underwood Corporation, One Park Avenue, New York 16, N. Y.

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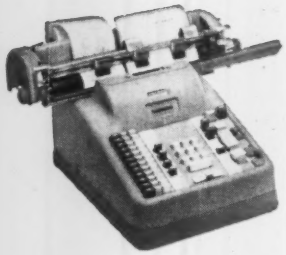
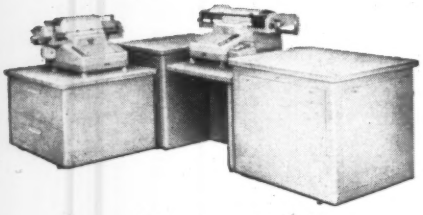
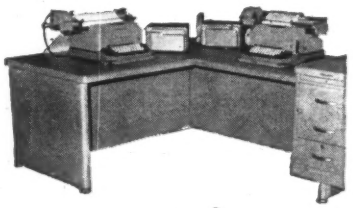
master-control systems



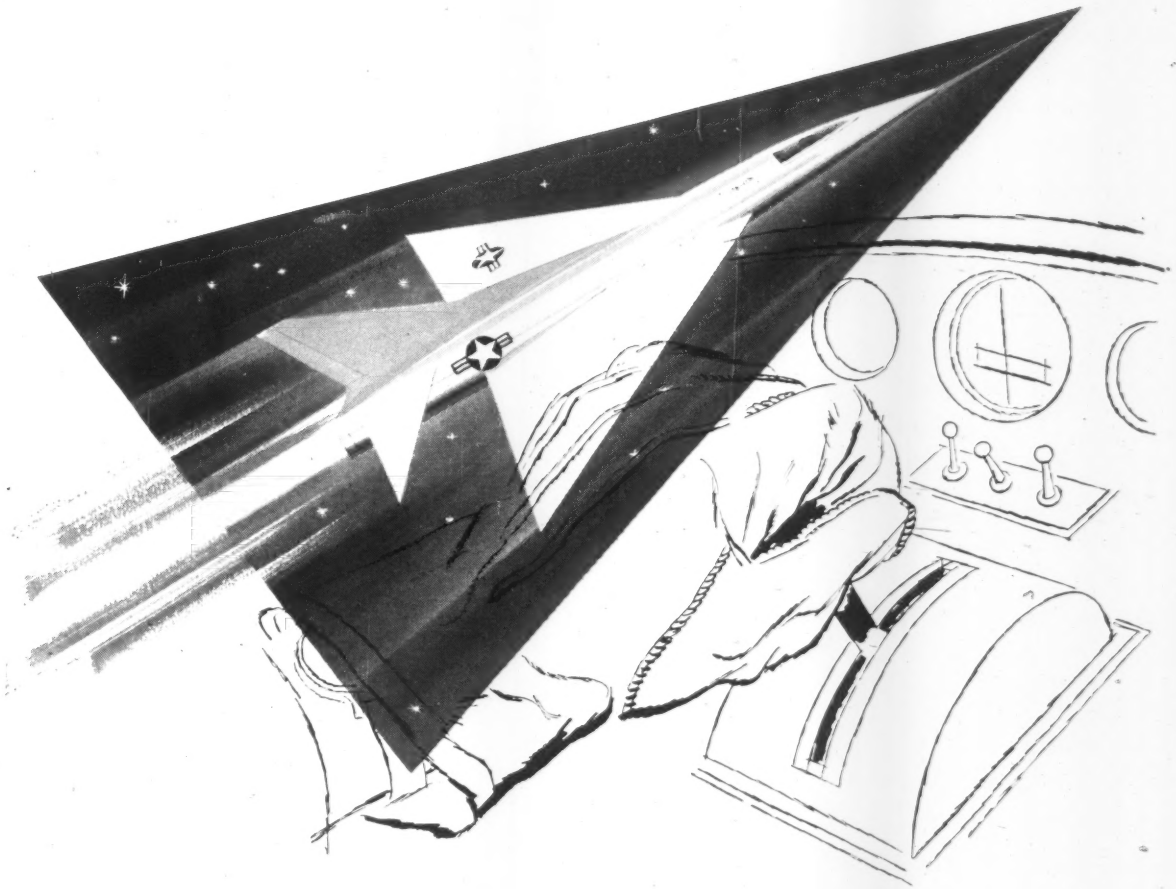
Post-Master, Sundstrand and Elliott-Fisher accounting machines



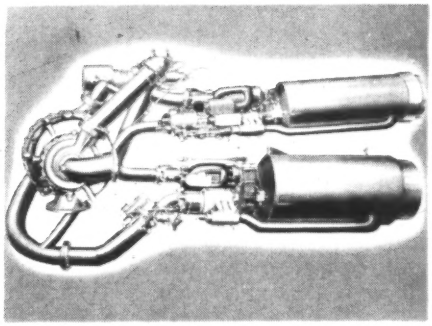
Elecom 50 electronic computer systems



Dataflo® processing systems



Higher and faster than ever before



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The Curtiss-Wright Rocket Engine would fit under the hood of your car, yet delivers a thrust equal to the power that drives a Navy cruiser at high speeds . . . a thrust that has flown man higher and faster than ever before. And this record-breaking power is controlled, by the hand of the pilot, for the first time in history . . . doesn't burn itself out in ordinary rocket fashion.

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The Rocket Engine is one of a group of Curtiss-Wright powerplants and missiles capable of several times the speed of sound . . . a group that includes also the Ram Jet . . . and the HTV rocket which reaches supersonic speed a fraction of a second after launching.

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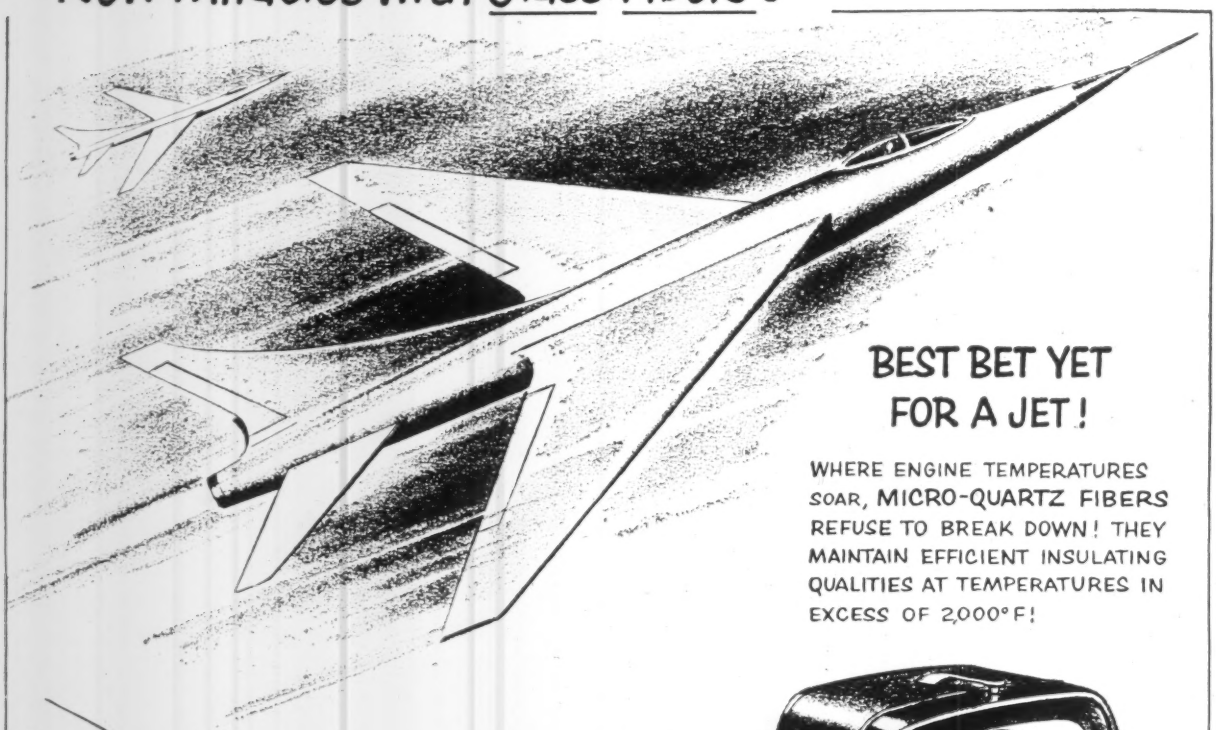

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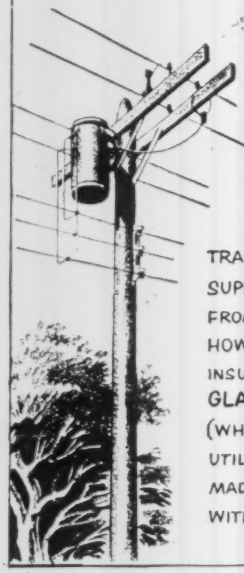
WHERE ENGINE TEMPERATURES SOAR, MICRO-QUARTZ FIBERS REFUSE TO BREAK DOWN! THEY MAINTAIN EFFICIENT INSULATING QUALITIES AT TEMPERATURES IN EXCESS OF 2,000°F!



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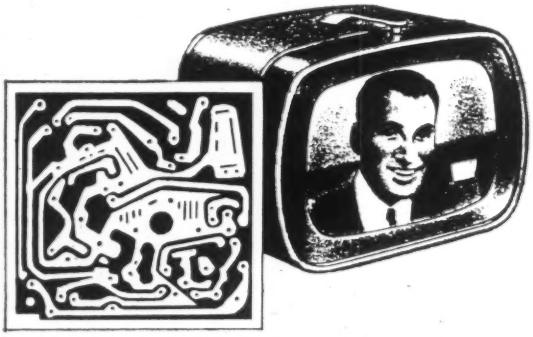
TRANSFORMERS NOW GET INSULATION SUPERIOR IN SPACE ECONOMY, FREE FROM VOIDS, RESISTANT TO MOISTURE. HOW? WITH GLASS-PAPER INSULATION MADE FROM L·O·F GLASS FIBERS' MICRO-FIBERS. (WHAT'S MORE, NON ROTTING UTILITY POLES ARE NOW BEING MADE OF PLASTIC, REINFORCED WITH GLASS FIBERS)



PRINTED CIRCUITS PASS TV'S SCREEN TEST!

PAPER MADE FROM L·O·F GLASS FIBERS' MICRO-FIBERS GIVES AN EXTRA-SMOOTH-SURFACED LAMINATE, WHICH IS EXCELLENT FOR PRINTED CIRCUITS... HAS SUPERIOR ELECTRICAL PROPERTIES.

Interested?

These examples show how L·O·F Glass Fibers' pioneering research and development are being put to work throughout industry. Perhaps one of our many glass and quartz fiber products will solve your current or future manufacturing problems. For complete information, write: *L·O·F Glass Fibers Company, Dept. 77-67, 1810 Madison Avenue, Toledo 1, Ohio.*

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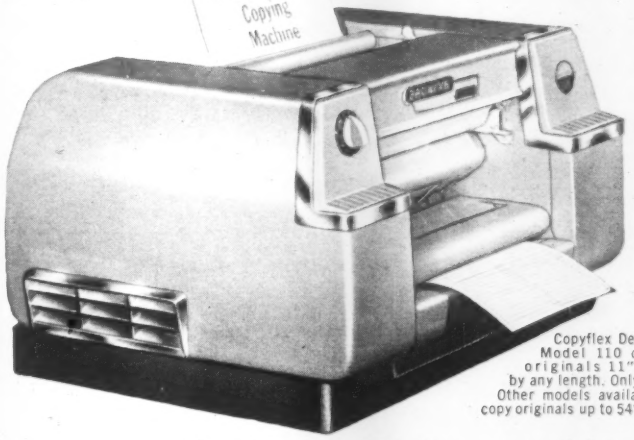

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Please send me information on the Copyflex process and machines.

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Address_____

City_____ County_____ State_____

"Better order two cheeseburgers and a dozen roses"

Downstairs, the night shift is beginning to clock in. Up here, the boss will be working late again. Maybe those flowers will give his wife something to look at besides television.

Almost every night it's the same story at this small but growing company. Too much work in some departments, not enough in others. Between overtime and idle time, the boss gets to bed pretty late – and then the profit picture keeps him awake.

Too bad he doesn't know about the Keysort Plant Control Plan. With weekly PCP work-load summaries, he could see *in advance* which departments are due to be overloaded . . . which will be slack. Thus he could add extra shifts, arrange transfers or lay-offs *in-time*. Result: tighter scheduling, smoother production flow, a shorter production cycle – and a lot less night work for the head man.

With just five fast, accurate Keysort PCP reports—1 daily, 2 weekly, 2 monthly—you can obtain complete modern management control of your business and your profits. At remarkably low cost.

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VOICE OF INDUSTRY

Ship Canal, Cleveland, Ohio—Williams Photograph

The advisability of a graduated corporate income tax . . . Short- and long-range solutions to the engineering shortage . . . The Social Security limitations on oldsters' earnings . . . Here are top management views on these questions.

TAXES, TALENT, AND INITIATIVE

CRAWFORD H. GREENEWALT, *President, E. I. du Pont de Nemours & Co., before the Economic Club of New York*

If there is anything on the national scene today which disturbs me, it is the fear that we seem to be forsaking the simple principle which brought us to greatness: The principle which in other lands at other periods brought a people to great achievement, then cast them to ruin when it was lost—the simple principle of encouraging men to give of their best effort.

Men are turned aside from their resolve to achieve in various ways. Sometimes it has been the dungeon and the guillotine; sometimes it has been the suffocation of the spirit as applied by a Stalin or a Hitler. Sometimes, as with us, it can be the simple matter of removing the incentives toward achievement.

We set high standards of achievement, yet, when the rewards of achievement are won, we reclaim most of them in the guise of taxation so that achievement becomes not only financially unattractive but an actual burden. We admire success, but penalize the successful; we admire talent, but penalize the talented; we admire initiative, yet penalize the initiator . . .

The result is that the evil of confiscatory taxes has, likewise, been first endured and ultimately embraced regardless of the wrong it imposes, regardless of the threat it poses to the future . . .

Now we have come to a point where it is proposed that this same principle of taxation be applied to corporations, calibrating the rate to the size of the corporate unit.

I suppose that, on the surface, this can be made to appear quite a reasonable approach. Certainly it is no less immoral than the application of the same premise to personal income. It is based on the same kind of tortured "ability to pay" reasoning which seems to have become well established even though we might argue with equal logic, that you or I should pay a dollar to ride in the subway, presumably filling out a form, under oath, while doing so.

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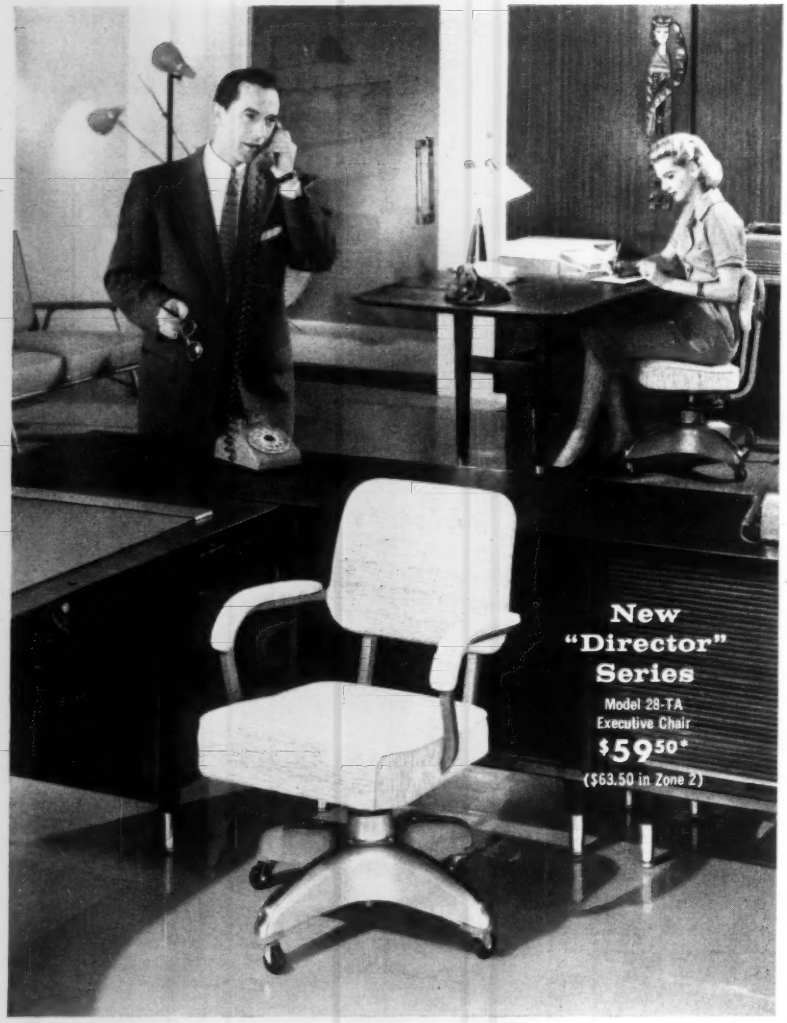

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*All prices shown are for DuPont Fabrilite upholstery; other fabrics slightly higher. (Zone 2—Texas and 11 Western States)

ENGINEERS AND INDUSTRY

GILBERT W. CHAPMAN, *President, Yale & Towne Mfg. Co., at Goddard College Leadership Seminar*

The solution to the engineering problem may be one of quality rather than quantity. I have been reading with great interest of the experience of some companies in placing the most highly trained scientific and engineering personnel in the center of technical groups, the other members of which are not graduate specialists.

Around each key technical person, these companies have put factory-trained or laboratory-trained technicians, with the engineer or scientist serving as group director. The technician in time learns to do the work that was previously done by an engineer. This system has successfully increased the effectiveness of engineering staffs.

HOMER DENIUS, *President Radiation, Inc., special to DR&MI*

Industry's job in attracting the nation's young people into the engineering field is largely one of public relations. The same imaginative and creative techniques that are used to draw attention to our products must be employed to paint the engineering profession in its most attractive colors.

Primarily, industry should seek means to lift the engineering profession to a higher plateau of public prestige. The engineer—most deservedly, I think—should be regarded by Americans with the same esteem and respect as a doctor or lawyer.

An industry-wide public relations campaign, such as I am suggesting, should not, of course, exclude industry's obvious obligations to help subsidize financially the enormously expensive education and training of potential engineers. Grants, scholar-

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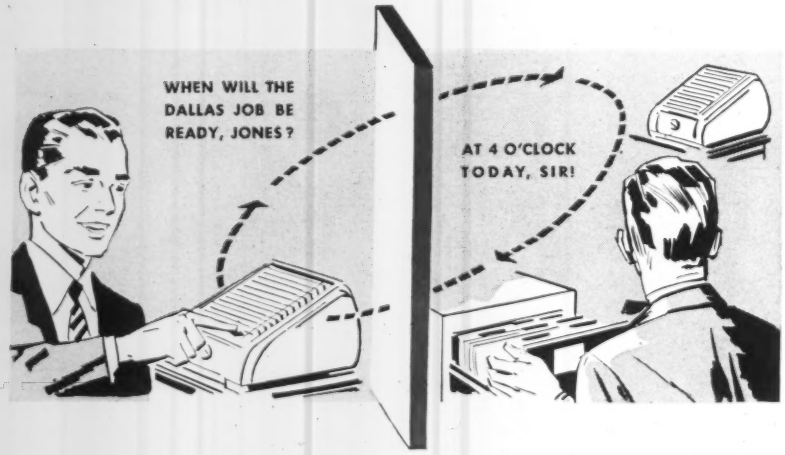

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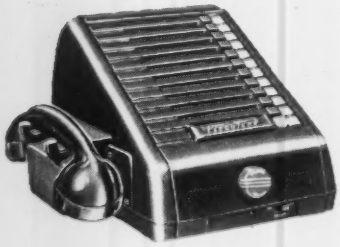

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ships, classroom cooperation and other forms of aid must naturally be continued and expanded. The only alternative is Federal subsidy, which almost none of us wants.

Even when the shortage is ended, competition between firms for the cream of the engineering crop will remain. It seems to me that wise managements will take the factors above into consideration and go beyond merely offering high salaries to good engineers. Attention should be paid to pleasant surroundings, healthy recreation facilities, favorable climate—in short, an ideal plant community for the young engineer to begin raising a family.

HIGHER EARNINGS AFTER 65

PHILIP M. ZENNER, *President, Royal McBee Corporation, special to DR&MI*

It is the responsibility of employers to help prepare their employees for the abrupt changes that come with retirement, and to assist them in maintaining their self-respect. In this, business needs the support of practical Social Security legislation.

The Social Security Act, even after the revisions of 1956, severely penalizes the retired worker whose initiative, capabilities, and sense of responsibility lead him to undertake part-time work for which he is particularly suited, or who turns a hobby or craft into a venture that supplements his pension and Social Security payments.

To correct this hardship, I am strongly of the opinion that the present restriction on allowable earnings of a retired worker should be liberalized to a more realistic figure.

Such a change would achieve important objectives. It would help business management develop more effective retirement programs, resulting in a more positive outlook and greater productivity among the older employees. It would enable the retired employee to enjoy the advantages of a higher standard of living.

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more speed!

more ease!

more value!

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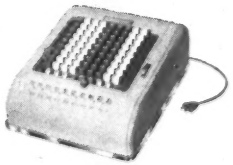

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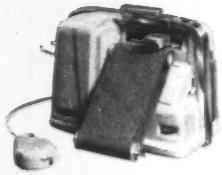

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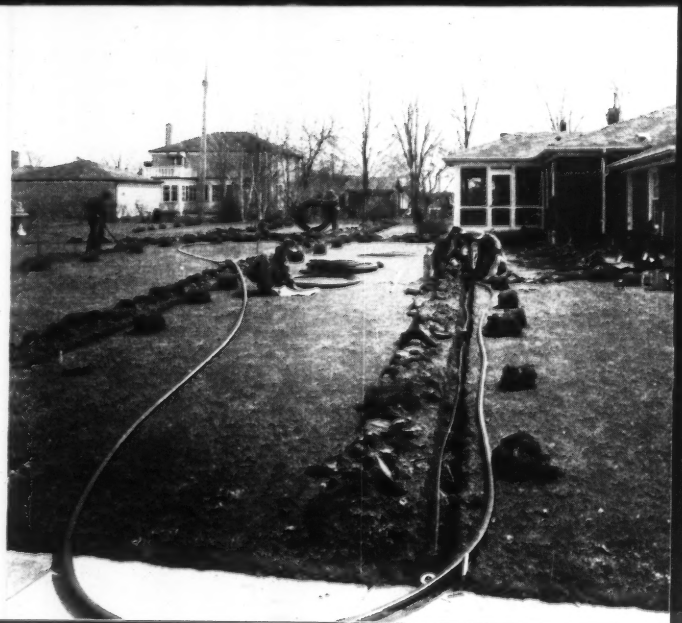
The battering of rushing water and silt is resisted by a paint coating made with BAKELITE Vinyl Resins. Used on locks and dams on the Mississippi River, it protects metal gates and underwater structures against wear and rust. Fast drying and long life are essential. Toughness and dependability are features of many kinds of coatings made with BAKELITE Resins . . . from quick-drying latex paints for your home interior, and coatings for masonry that seal over cracks, to protective linings for food cans and paperboard milk cartons.

Underground sprinkler systems cost less and last longer with pipe made of BAKELITE Brand Polyethylene. It won't rust. It's so light in weight one man can carry hundreds of feet with ease. Since it's installed in long lengths, few fittings and connections are needed. Its toughness and elasticity minimize danger of freeze-up damage, and the need for deep trenches. All these advantages make it easier for farmers to afford more water piping for watering stock and irrigation. And they reduce capital costs and upkeep for watering parks, golf courses and similar developments.



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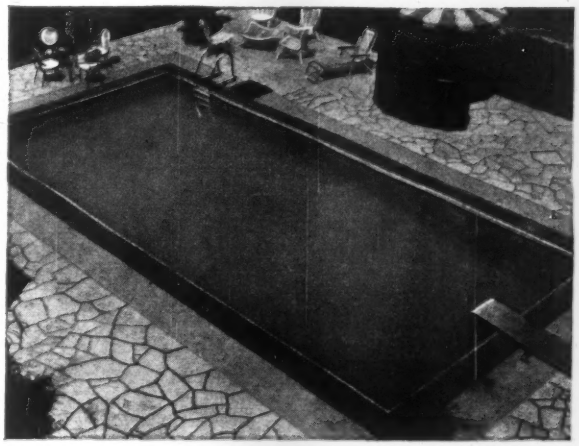
Whether you wish color, light weight, chemical resistance, flexibility, or any of many other material advantages, BAKELITE is your largest storehouse of plastics with which to build better products for business, industry and the home. Phenolics, styrenes, impact styrenes, polyethylenes, vinyls, polyesters, silicones, and epoxies are all available at this one convenient source of materials . . . plus a wealth of experience to help others use plastics to their greatest advantage.



Fun for the whole family! A pool liner made of tough, yet flexible KRENE sheeting can be installed at reasonable cost and at the same time enhance the value of your home. Such economical installations make pools of this type ideal for family use. Noted for consistent high quality, KRENE is also used for shower curtains, raincoats, water-repellent upholstery and wall coverings.

To keep water from seeping through the cellar floor, a moisture barrier film made of tough BAKELITE Polyethylene is laid on the ground, and the concrete floor poured on top. Unaffected by lime or soil acids, the barrier is permanent. Polyethylene film is also used to package fruits, meats, and vegetables to keep in flavor-protecting moisture . . . as glazing for economical shatterproof greenhouses . . . or trenches to hold water for irrigation.

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similar developments.

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Every day, numerous and diverse problems confront the American businessman engaged in foreign trade. Often these problems are solved through teamwork by the businessman, his banker and The Chase Manhattan Bank as correspondent.

The people in the Chase Manhattan International Department answer questions concerning overseas trade from current information supplied from its comprehensive credit files. Additional facts where needed are provided by a network of overseas branches and correspondent banks in all commercially important trade areas.

If you'd like to learn how Chase Manhattan teamwork can help you expedite overseas business transactions, we invite you to call on one of the officers of our International Department.

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THE TREND OF BUSINESS

- *$447 Billion Ahead*
- *Steel and Autos Stable*
- *Backlogs Decline*
- *Employment High, Rising*
- *Retail Sales Gain*
- *Construction Up Seasonally*

THE QUICKENING in business activity this Spring was not quite so pronounced as in some past years, but production, sales, building activity, and employment remained at record levels for the time of year, and the prospects for the coming nine months looked bright. A steady rise from quarter to quarter seemed likely to push the gross national product to about $447 billion in the first quarter of 1958, a gain of almost 5 per cent from the $427 billion in the first quarter of this year. Perhaps half of this rise will result from increased prices.

Still diagnosing inflation as the chief threat to our economic health, the Business Advisory Council, composed of prominent industrialists and Government officials, concluded at its Spring meeting that 1957 would be a better year than 1956. The Council was formed in 1933, primarily to keep the Government informed of business men's sentiments about the economy. According to Sinclair Weeks, Secretary of Commerce, the industrialists felt more optimistic about the second half of this year than they were about the first half. A majority thought that while the rate of inventory accumulation might continue to slacken, it seemed improbable that any large-scale inventory liquidation might occur.

From peak to plateau

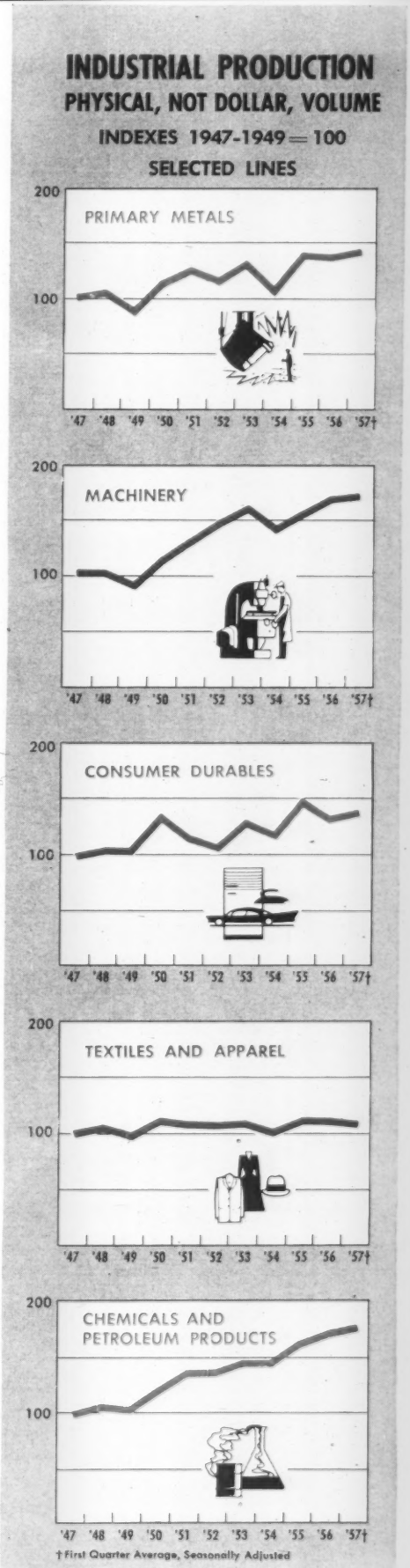
Stock prices rose in April and early May, evidence of the pleasure and surprise over first-quarter earnings reports. In announcing the attainment of an all-time peak in his company's quarterly earnings, Roger Blough, chairman of the United States Steel Corporation expressed the view that 1957 would be a "good year for steel." He thought that the industry probably would produce 115 million tons in 1957—about the same as in 1956 when the steel strike reduced output by 2 million tons from 1955's record high.

Steel production in the first eighteen weeks of 1957 was at the rate of about 125 million tons a year. If Mr. Blough's estimate for 1957 as a whole is correct, output in the remainder of the year may fall slightly below current rates to an average level of about 2.1 million tons a week. The downward adjustment toward this level was already in evidence in early May, when weekly steel production dipped to about 2.2 million tons from the 2.5 million level so frequent earlier in the year.

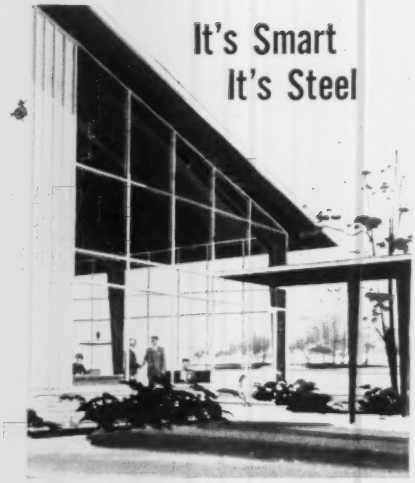
Notwithstanding the more tranquil pace of steel production in store for 1957, the long-term prospects may call for a considerable expansion. It is Mr. Blough's judgment that an additional 50 million tons of steel-making capacity will be needed by 1975, a gain of almost 38 per cent from the present capacity of about 133 million tons a year.

Auto sales up

Both the sales and the production of automobiles in the first four and one-half months of 1957 were very slightly higher than in the comparable period of 1956. Since it was in May last year that the automobile manufacturers began to curtail their output drastically in the effort to reduce the then record inventories, the year-to-year comparison for May 1957 output appears much more favorable than the comparison for many of the preceding months.



The physical volume of industrial production in the first quarter of 1957 compared very favorably with that in previous, excellent years. Manufacturing was at peak levels in some lines, not far below in others.



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The automobile manufacturers scheduled output at 539,500 cars this May, compared with 471,673 a year ago, a gain of 14 per cent. While a few of the manufacturers still believed that there would be 6.5 million cars produced in 1957, the estimate so popular earlier in the year, most industry observers thought that about 6 million cars would probably roll off the assembly lines in 1957, about the same number as in 1956. The dealers' stocks of new cars in early May dipped to 735,197, some 18 per cent fewer than a year ago. This inventory represented a 41-day supply at the current rate of sales. Traditionally, a 30-day supply is considered normal.

Most dealers reported that their profits this year were somewhat larger than in 1956. There were marked variations in sales by make and model, with volume in the more popular cars running as high as 20 per cent above a year ago.

Orders dip again

Production and sales for manufacturing as a whole were sustained at high levels in the first quarter of 1957, although new order volume declined steadily. Backlogs of unfilled orders at the end of March were slightly smaller than at the beginning of the year, but still 7 per cent larger than in the comparable period of 1956. Manufacturers inventories continued to rise somewhat, with

BUSINESS SIGNPOSTS

1939 Average	1947 Average	Selected WEEKLY Indicators†	Latest Week	Previous Week	Year Ago
102	163	**STEEL INGOT PRODUCTION** Ten Thousand Tons (a)	222	216	240
25	49	**ELECTRIC POWER OUTPUT** Ten Million KW Hours (b)	115	113	109
76	121	**BITUMINOUS COAL MINED** Hundred Thousand Tons (c)	96	97	98
69	92	**AUTOMOBILE PRODUCTION** Thousand Cars and Trucks (d)	151	149	127
35	98	**DEPARTMENT STORE SALES** Index 1947–1949 = 100 (e)	133	132	129
5	13	**BANK CLEARINGS** Hundred Million Dollars (f)	234	207	221
284	67	**BUSINESS FAILURES** Number of Failures (f)	264	267	279

1939 Average	1947 Average	Selected MONTHLY Indicators‡	Latest Month	Previous Month	Year Ago
58	100	**INDUSTRIAL PRODUCTION** Index 1947–1949 = 100 (e)	146	148	144
58	95	**NONFARM COMMODITY PRICES** Index 1947–1949 = 100 (g)	125.3	125.4	121.6
37	100	**FARM COMMODITY PRICES** Index 1947–1949 = 100 (g)	90.6	88.8	88.0
59.4	95.5	**CONSUMERS' PRICE INDEX** Index 1947–1949 = 100 (g)	119.1	118.9	114.9
3.5	10.0	**RETAIL SALES** Billions of Dollars (h)	16.3	15.9	15.0
5.4	15.6	**MANUFACTURERS' SALES** Billions of Dollars (h)	30.0	27.8	28.5
45.8	58.0	**EMPLOYMENT** Millions of Persons (h)	64.3	63.9	64.0
72.9	190.5	**PERSONAL INCOME** Billions of Dollars, seasonally adjusted annual rate (h)	339.3	338.1	321.7
103	257	**BUILDING PERMIT VALUES** Millions of Dollars (f)	588.2	544.0	524.1

SOURCES: (a) Amer. Iron & Steel Inst.; (b) Edison Elect. Inst.; (c) Bureau of Mines; (d) *Automotive News*; (e) Federal Reserve Board; (f) DUN & BRADSTREET, INC.; (g) Bureau of Labor Statistics; (h) Department of Commerce.

†WEEKLY INDICATORS: Steel data for the fourth week of May; coal and sales for the second week; all others for third week.

‡MONTHLY INDICATORS: Manufacturers' sales data for March 1957; all others for April 1957.

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Capital and Surplus over $200,000,000

most of the increase in finished goods inventories, rather than raw materials or goods-in-process.

Although the average number of hours that production workers spent in the factories contracted slightly this Spring, the factory work week did not drop much below 40 hours and hourly wage rates remained high. The average factory worker's weekly pay amounted to $81.80 in April, $2.80 more than a year ago.

Employment peak ahead

That over-all employment will climb to a new record this Summer was forecast by James Mitchell, the Secretary of Labor. The all-time peak in employment occurred last August when there were 66.5 million job holders. Mr. Mitchell estimates that employment will rise to 68 million persons this year. Said he, "Continued economic strength, coupled with seasonal expansion in agriculture, construction, and other seasonal industries, should push national job totals to new all-time highs."

There were 64.3 million people employed in April, more than in either the preceding month or a year ago. It is expected that about 1 million Summer jobs will open up in the farming and construction industries. Additional workers will be required at vacation resorts and at food processing factories, too.

Labor-management relations were more peaceful in the first quarter of 1957 than they had been for some time. The number of strikes, workers involved, and mandays of idleness were less than in any similar period in eight years, according to estimates from the Department of Labor.

Retailers sell more

Reflecting the continued high levels of employment and income, retail trade flourished this Spring. At a peak for the time of year, retail sales rose to $16.3 billion in April. This was slightly higher than in March and about 6 per cent above a year ago. Consumers' purchases of food, apparel, and home furnishings remained high in May. Regional gains

This is a Business Conditions Staff Report, prepared by Lorraine Carson, Business Conditions Editor.

from last year in retail sales in early May varied from 5 or 6 per cent in the Middle Atlantic and Pacific Coast states to about 1 per cent in the South Atlantic region.

Credit stable

The use of consumer credit diminished very slightly in March, although it usually increases somewhat at that time of year. Consumers' short-term debts amounted to $40.5 billion at the end of March, almost the same as a month previously, but $2.7 billion higher than a year ago. The year-to-year rise in consumer credit was 7 per cent, slightly greater than the 5 per cent gain in consumers' after-tax income. Repayments of installment credit remained high, but they were surpassed by new extensions, so that installment debt outstanding at the end of March rose somewhat to $31.3 billion.

Living costs higher

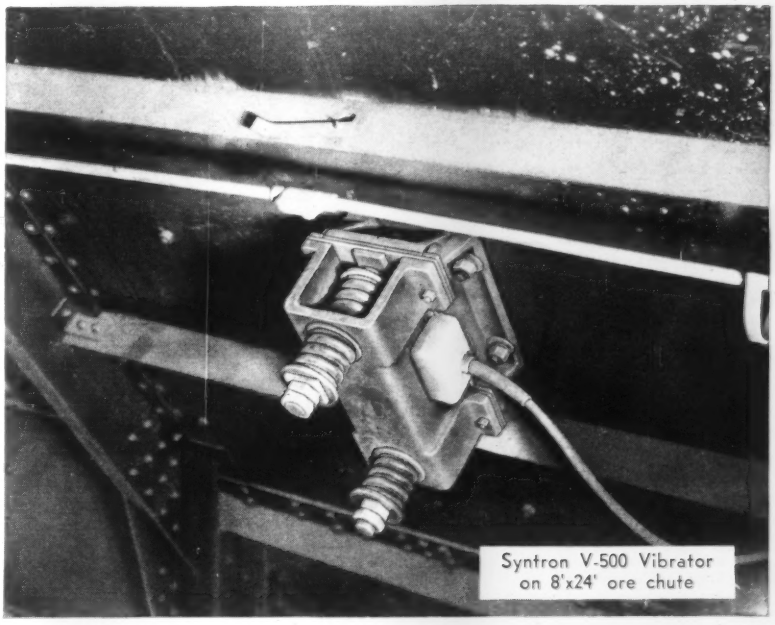
A decline in the prices paid by consumers for food in March was not large enough to offset increases in the prices for all the other goods and services used by the typical middle-class urban family. The cost of living reached another new high in March, almost 19 per cent higher than the average for the years 1947-1949, and about 4 per cent higher than a year ago. The largest gains were in the prices for apparel, used cars, and medical care.

Contrasting with the persistent gains in consumer prices, average wholesale prices for both industrial and farm commodities appeared to be leveling off, while spot prices for a number of raw materials declined in April and early May.

Public construction soars

Somewhat surprising in view of the decline in home buying, outlays for new construction rose to $3.5 billion in April, lifting the January-April total to $12.5 billion, a new record for the time of year, 2 per cent above that in the corresponding period of 1956. The gain was entirely attributed to increased spending for public construction.

Jumping 20 per cent in April, outlays for public construction were 10 per cent higher than a year ago, largely because of increased outlays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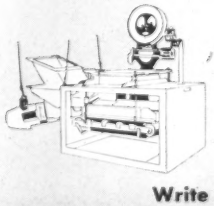

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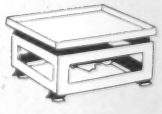

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for public housing, industrial and administrative buildings, highways, and conservation and development.

Privately financed building fell about 2 per cent below a year ago in April, dragged down by the 12 per cent decline in housing construction and a 17 per cent decrease in stores, restaurants, and garages.

For the first four months of 1957, private construction fell 1 per cent, but the decline was more than counterbalanced by an 11 per cent gain in public construction.

The largest year-to-year gain in public construction in the first four months of 1957 occurred in outlays for public housing, up 45 per cent. But spending for residential building constitutes a very small part of total public construction outlays, roughly 3 per cent.

The largest single category of public construction spending is for highways, which cost $360 million in April, almost one-third of the public construction outlays. Although the spending for highways in April rose 50 per cent above the March level, this large gain did not push the four months' total of highway outlays appreciably above a year ago. Only about 3 per cent more was spent this year for highways than last.

The second largest type of public construction, constituting 21 per cent of the total, was school building. Public spending for new schools in the first four months of the year was 10 per cent higher than in the comparable period of 1956.

Home building lags

While there was a slight month-to-month rise in privately financed home construction in April, spending for new dwelling units remained 14 per cent below a year ago, and for the first four months of 1957 outlays were 11 per cent smaller than in 1956. The renovation of existing dwellings continued at a rapid pace. Expenditures for additions and alterations to the present stock of houses in the first four months was 9 per cent higher than last year.

The actual number of dwelling units started in April was the smallest for any April since 1949. Housing starts in the first four months of the year were 17 per cent fewer than in the comparable period of 1956. Although the seasonally adjusted annual rate of housing starts fell below

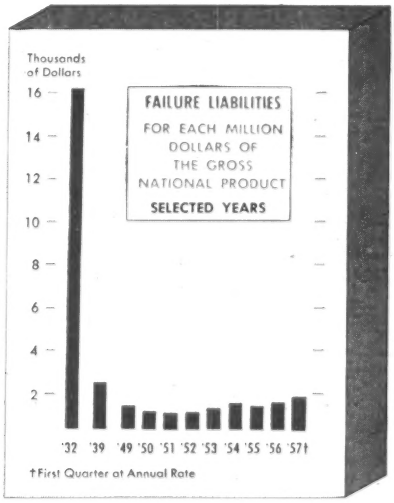
1 million units for the fourth consecutive month. April was the first month since last October in which the rate of starts turned upward.

After discounting for the usual Spring upturn, which occurs when weather conditions become more favorable for outdoor work, housing starts were at the rate of 940,000 units a year in April, compared with 880,000 in March and 1,157,000 a year ago.

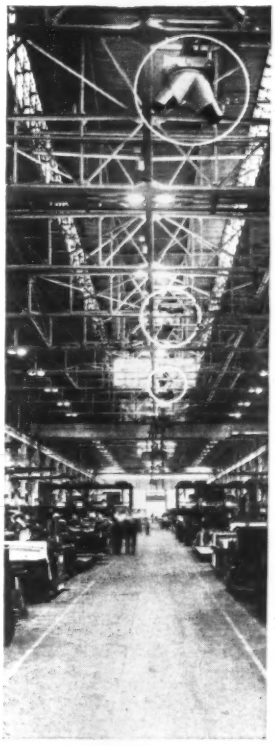
Farmers net rising

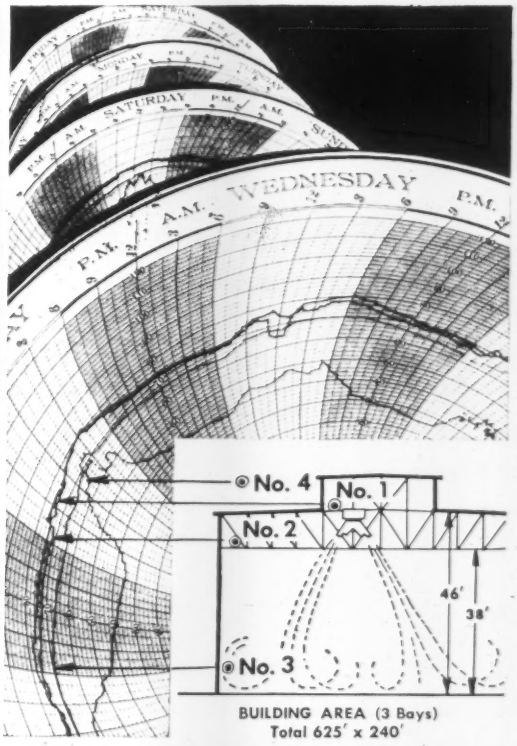
That the farmers' net income this year is likely to be higher than in 1956 was forecast recently by the Department of Agriculture. A 4 per cent annual rise, equivalent to that in 1956, is expected to lift net farm income in 1957 to about $12.3 billion from last year's level of $11.8 billion. While total cash receipts from farm marketings this year are unlikely to be as large as last year, increased Government payments, principally under the soil bank program, are expected to offset any losses.

Under the soil bank plan, farmers will be paid about $1 billion for withdrawing land from the production of surplus crops. Since large reductions in plantings are planned for wheat, corn, cotton, tobacco, and rice, farmers' receipts from the sale of crops are expected to drop considerably this year. In contrast, marketings of livestock and livestock products will probably be somewhat larger.



Although they have increased steadily in the past few years, failure losses are far less important now, in relation to total output of goods and services, than in 1932. The latest failure data appear on page 47.





BUILDING AREA (3 Bays)
Total 625' x 240'

RECORDED TEMPERATURE READINGS PROVE THE HEATING EFFICIENCY OF WING REVOLVING UNIT HEATERS

Effectiveness of Revolving Distributors is shown by Low Temperature Differential between Roof and Working Level

When the Budd Company's new plant in Philadelphia was erected, twelve Wing Revolving Unit Heaters with No. 8 Distributor Outlets were selected to heat the plant.

A series of temperature readings between floor and roof was made using a four-point recording thermometer. Over four weekly periods during February, March and April the following averages were recorded.

Bulb No. 1 (in monitor)	...75.5°F.
Bulb No. 2 (in truss chord)	...73°F.
Bulb No. 3 (working level)	...66.5°F.
Bulb No. 4 (outside)	...ranged between 20° and 70°F.

The complete and uniform heating of this plant proves beyond question the ability of Wing Heaters to project heated air to the working level without hot blasts.

In summer with steam turned off, the revolving distributors produce a pleasant, cooling effect.

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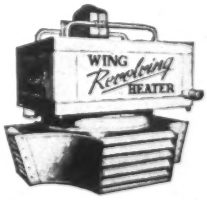

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BUSINESS FAILURES

DECLINING 12 per cent from the previous month's postwar high, business failures totaled 1,175 in April. However, casualties continued 14 per cent above those of April 1956; they were the heaviest for any April since 1940, when 1,291 occurred.

Businesses failed at a rate of 48.2 per 10,000 enterprises listed in the DUN & BRADSTREET *Reference Book*, according to DUN'S FAILURE INDEX which extends monthly mortality to an annual basis and adjusts for seasonal fluctuations. The rate dipped from 54.9 in March, but exceeded the 42.2 recorded in April last year. Despite the marked rise during the past fifteen months, failure rates remained far below the prewar level. In April 1940, concerns failed at a rate of 67.4 per 10,000.

Contrasting with the decline in the number of casualties, their liabilities rose 2 per cent to $57.1 million. Failures in all size groups were less numerous than in March, with the sharpest decline occurring among those involving liabilities under $5,000. In the million dollar class, one less business failed than in March, but the aggregate liabilities were higher and accounted principally for the month-to-month rise in losses. Tolls exceeded the 1956 level in all sizes, with the most noticeable rise in the $100,000 class.

All industry and trade groups had fewer casualties in April than in March except for commercial service, where tolls climbed to the highest level since this record was begun in 1934. There was a decrease from March in all manufacturing industries, except food, leather, and transportation equipment.

More businesses failed than a year ago in all major functions. There was a slight 2 per cent rise in manufacturing and a mild 12 per cent increase in construction, but the trades showed a rise of 25 per cent, and services had a 30 per cent increase.

In six of the nine major geographic regions failures declined in April. The Middle Atlantic, the East and West North Central, the West South Central, and the Mountain States reported a decline, while casualties climbed in the New England, East South Central, and Pacific States. In all areas except the Mountain States, failures exceeded those of last year.

FAILURES BY DIVISION OF INDUSTRY

(Current liabilities in millions of dollars)	Number 4 Months 1957	Number 4 Months 1956	Liabilities 4 Months 1957	Liabilities 4 Months 1956
MINING, MANUFACTURING...	825	821	83.6	64.9
Mining—Coal, Oil, Misc..	24	13	5.4	3.5
Food and Kindred Products	65	75	4.8	5.1
Textile Products, Apparel..	182	218	12.8	13.7
Lumber, Lumber Products..	151	131	8.1	9.3
Paper, Printing, Publishing.	43	32	1.8	1.3
Chemicals, Allied Products.	23	13	2.1	2.2
Leather, Leather Products.	26	31	3.6	1.6
Stone, Clay, Glass Products	21	10	1.1	2.3
Iron, Steel and Products...	39	47	19.8	4.6
Machinery.....	88	104	10.5	11.1
Transportation Equipment.	25	21	2.1	2.0
Miscellaneous.....	138	126	11.6	8.2
WHOLESALE TRADE.....	433	428	29.5	19.0
Food and Farm Products..	100	94	7.8	3.2
Apparel.....	18	24	1.1	0.9
Dry Goods.....	10	14	0.2	0.3
Lumber, Bldg. Mats., Hdwre	49	58	2.4	3.9
Chemicals and Drugs.....	23	14	1.0	0.3
Motor Vehicles, Equipment	26	23	1.5	1.1
Miscellaneous.....	207	201	15.4	9.4
RETAIL TRADE.....	2432	2081	66.5	52.8
Food and Liquor.....	394	327	7.5	4.7
General Merchandise.....	110	98	5.8	5.0
Apparel and Accessories...	431	402	8.6	8.4
Furniture, Furnishings....	372	280	13.7	8.6
Lumber, Bldg. Mats., Hdwre	162	122	5.3	3.7
Automotive Group.....	263	232	6.7	9.9
Eating, Drinking Places...	435	365	11.5	7.3
Drug Stores.....	55	50	1.8	1.4
Miscellaneous.....	210	205	5.5	3.6
CONSTRUCTION.....	734	570	38.6	30.1
General Bldg. Contractors.	290	214	22.3	15.2
Building Subcontractors...	394	321	12.4	12.9
Other Contractors.....	50	35	3.9	2.0
COMMERCIAL SERVICE.....	381	327	14.3	9.8
TOTAL UNITED STATES.....	4805	4227	232.4	176.6

Liabilities are rounded to the nearest million; they do not necessarily add to totals.

THE FAILURE RECORD

	Apr. 1957	Mar. 1957	Apr. 1956	% Chg.†
DUN'S FAILURE INDEX*				
Unadjusted.....	51.6	58.7	45.2	+14
Adjusted, seasonally	48.2	54.9	42.2	+14
NUMBER OF FAILURES..	1175	1336	985	+19
NUMBER BY SIZE AND DEBT				
Under $5,000.....	149	183	137	+ 9
$5,000–$25,000.....	584	698	489	+19
$25,000–$100,000...	338	344	279	+21
Over $100,000.....	104	111	80	+30
NUMBER BY INDUSTRY GROUPS				
Manufacturing.....	190	239	186	+ 2
Wholesale Trade...	115	121	92	+25
Retail Trade.....	580	672	463	+25
Construction.....	172	205	153	+12
Commercial Service.	118	99	91	+30
	(LIABILITIES in thousands)			
CURRENT.....	$57,103	$55,833	$41,871	+36
TOTAL.....	57,347	56,175	42,666	+34

*Apparent annual failures per 10,000 enterprises listed in the Dun & Bradstreet *Reference Book*.
†Per cent change, April 1957 from April 1956.

BUSINESS FAILURES *include those businesses that ceased operations following assignment or bankruptcy; ceased with loss to creditors after such actions as execution, foreclosure, or attachment; voluntarily withdrew leaving unpaid obligations; were involved in court actions such as receivership, reorganization, or arrangement; or voluntarily compromised with creditors out of court.*

CURRENT LIABILITIES, *as used in The Failure Record, have a special meaning; they include all accounts and notes payable and all obligations, whether in secured form or not, known to be held by banks, officers, affiliated companies, supplying companies, or the Government. They do not include long-term, publicly held obligations. Offsetting assets are not taken into account.*

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FOLLOW-THE-LEADERISM—

where does it lead?

Keeping up with the Joneses is a poor principle on which to operate a company, everyone agrees, and yet . . .

ALFRED G. LARKE, *Employer Relations Editor*

AN ALCOHOLIC, according to the dictum of one distinguished physician, is a man who drinks more than his doctor does, and a diagnosis in this area may reveal as much about the doctor as about the patient. Similarly, a leader in some new kind of management policy or program might be defined as a company that adopted it before *you* did; a bandwagon-hopper, as one who picked it up later. It often all depends upon when *you* happened to join that particular parade.

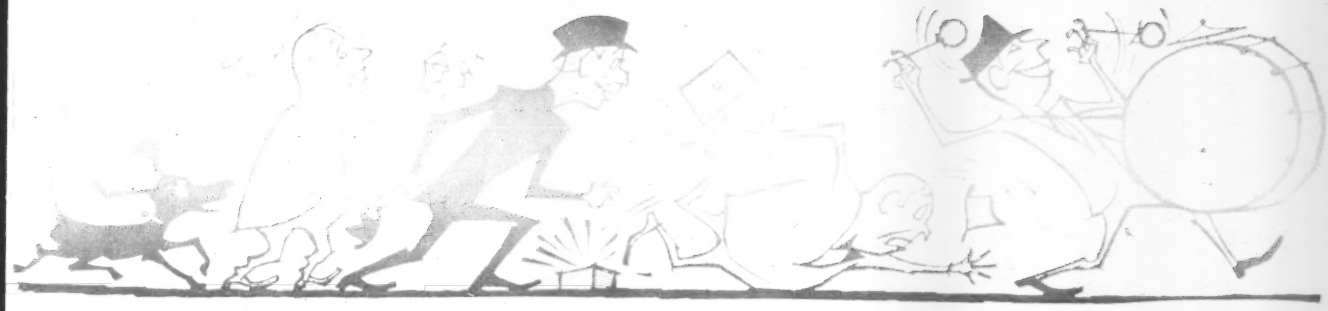
The fact remains, however, that follow-the-leaderism does exist as a tendency among some companies, and especially in regard to certain kinds of programs and policies. For bad reasons or inadequate ones, a concern will often launch an undertaking in personnel policy, marketing, production, or whatnot, because some bellwether company has done the same and has reported it successful, or because inadequately digested statistics show that more managements are following course "A" this year than course "B."

It is not simple to divide the sheep from the goats, however. Except in the comparatively rare case of a company completely dominated by an individual with an unmanagerial vanity that makes him want to see his name associated with the big boys of his industry in some widely talked-about new practice, the motive for getting aboard a bandwagon, even though it be the wrong bandwagon, is likely to be the urgent need to solve a corporate problem. The mistake comes in grasping for the first, the easiest, or the most talked-of solution, without adequate consideration of whether this is the right medicine for the disease that afflicts *this* company; what relieves one concern's tension may give another one ulcers.

Thus, a management suffering or threatened with losses, may decide that diversification of products—a popular practice since World War II—is just the cure for profit-and-loss aches and pains. Yet its real problem may be a weakness in production or marketing which will only be made worse by spreading to the new product lines. Like the farmer who rejected new methods because he already wasn't farming as well as he knew how, the company in distress may need first to increase its efficiency in whatever it is now doing before it moves on in an attempt to conquer new worlds. For an example in the non-industrial world, the Soviet Union may now be said to be considering improving its primary product before trying for more new markets; it has perhaps learned the hard way, in Poland and Hungary, that the bug is in the management and not in the customers.

Often considered the tip-off to follow-the-leaderism is the degree to which a company may make policy decisions on the basis of statistical reports on "prevailing practice." Fifty-five per cent of companies grant *x* number of holidays annually; only 45 per cent grant *y* number. Therefore, it is recommended that we grant *x* number. (Next year, of course, this may result in the tabulation showing *60* per cent grant *x* holidays and only *40* per cent give *y* holidays; the practice begins to snowball.) Or a union contract may tie wage scales to those prevailing in a nearby community, but unless the skills required of the operators and other conditions are the same in both communities, employers in both towns are apt to find themselves in the middle of a union whipsawing operation.

Example: Semiskilled operators in the suburb of one metropolis are in



a local union of their own. For years, their contract with their employers' association promised them any raises granted similar semiskilled operators in the metropolis. But in the big town, the semiskilled were in the same local with a group of more skilled operators. Six months after the suburban contracts were signed —and this went on for years—the metropolitan employers granted increases based primarily on the demands of the more skilled men.

Now It Begins to Hurt

For some reason, perhaps because the semiskilled were only a minority in the big-town local, the semiskilled got a free ride on the coat tails of their more skilled colleagues. The big-town employers knew this, figured on it, and were at least resigned to it. But its effect on the suburban employers was hard to take: the semiskilled had to be raised to what their brothers (and the skilled men) were making in the big city. Next time the employers in the metropolis went into bargaining sessions, they felt the delayed result: "Our *semiskilled* men in X Township are getting as much as *skilled* men here," the union negotiators told them. "We must re-establish the differential." This is a little more efficient from the union's point of view than pulling yourself up by your bootstraps. It is pulling yourself up by your boss's bootstraps. And it is a crass example of where follow-the-leaderism leads to, if the following is blind or disregards differences in individual circumstances.

The expediencies, or assumed expediencies, of collective bargaining probably dictated the built-in, follow-the-leader contract clauses that permitted these two unions to whipsaw their respective employers every six months or year. There are many other instances, however, in which it is impossible to lay the blame on an aggressive union leadership that is taking advantage of every opportunity the situation permits. In many cases—and especially in regard to personnel practices—companies play follow-the-leader where there is no organized group pressing them.

The explanation may lie in the national trend to conformity, which sociologists have lately begun to decry —tests that assure that prospective executives are the kind who will "adjust" well to others; housing, recreational, political, economic, and career ambitions and standards that, it is said, tend to eliminate the imaginative and to assure that everyone, to be successful, will be as much like everyone else as possible.

If it be true—and it appears to be —that follow-the-leaderism is especially rampant in the area of personnel policies, there may be support for the sociologists' claims and alarms. For, generally speaking, the personnel director of a company, even if he be a vice president, is low man on the totem pole. His status in the management hierarchy, despite 20 years of human relations talk, usually falls far below that of the financial, sales, and production heads.

Concerned about his standing, the low man on the pole is more apt to try to find safety in doing what others do than is the higher-ranking executive, who may feel safe enough in his position to risk making mistakes in his attempt to do a better job. Better-acquainted with all the company's problems, too, the higher-ranking man is more apt to come up with an idea well tailored to meet and solve those problems than is his management stepbrother, who knows the details less intimately and therefore must guess more. Finally, the less-favored management functionary is more likely to yield to the temptations of empire-building and empire-maintenance; he may propose, and even bull through, a program designed to bolster his importance by increasing or maintaining the size of his staff.

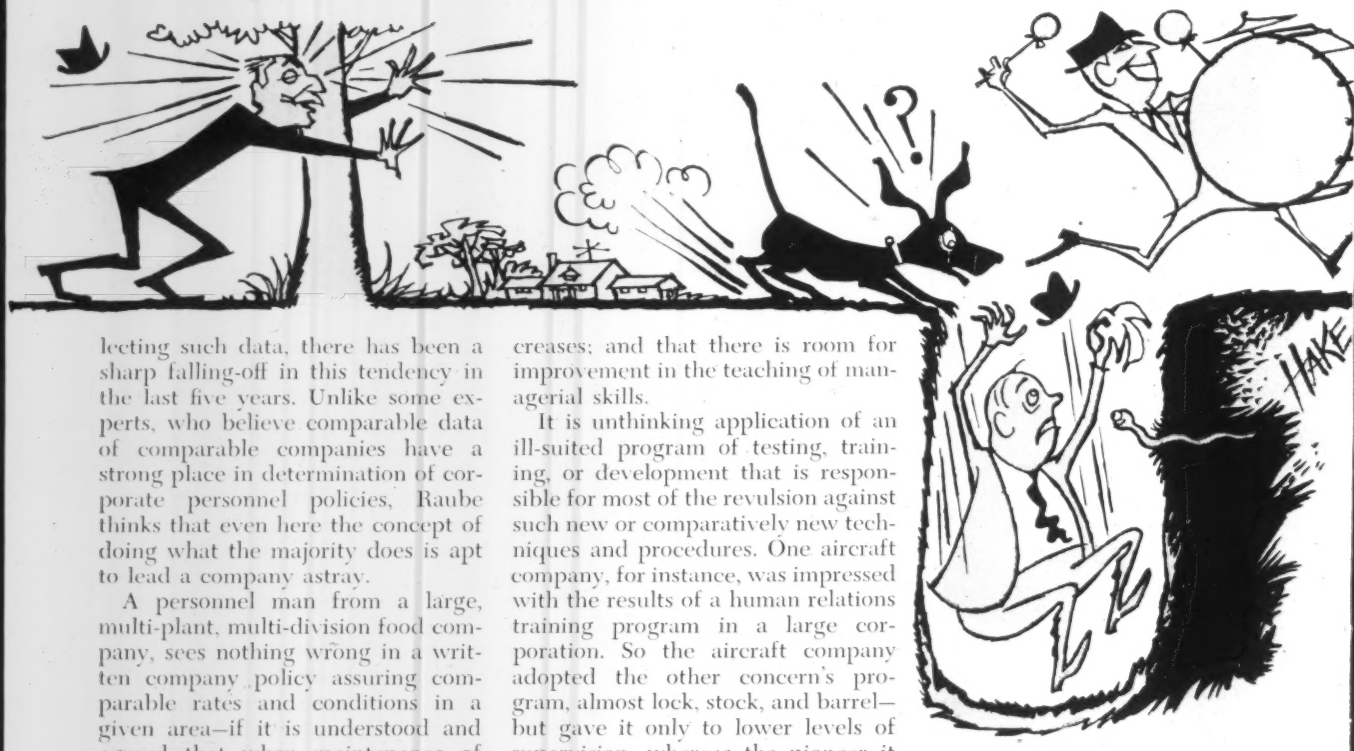
Other factors promote follow-the-leaderism in the personnel practices field. A common one is the company statement of policy to the effect that it proposes to pay as well as anyone else in the area or industry, or better, for comparable services. If adopted and followed by all the employers in a given industry or area, this policy would lead soon, by a circular method, to maintenance of the status quo. A will pay more if B pays more; B will pay more if A does.

Enter the Statistician

Once they are paying equally, or think they are, no increases are necessary. Actually, of course, a union demand in one plant, or a specific labor shortage in another, will upset the status quo and, if policy is followed, result in increases all around the circle of companies that have made similar pledges. Meanwhile, however, both management and union (if any) are busily collecting data on which to base arguments for an increase or for no increase; and the data, once collected, tend to be used more and more in deciding issues.

The standard of comparable area or industry wages has been promoted in Federal legislation, beginning with the Walsh-Healey Act and continuing through the regulations of wartime control agencies, all of which have promoted the practice of looking to statistical summaries for guidance in personnel areas not covered by these laws and regulations.

The member who calls up the American Management Association or the National Industrial Conference Board, and asks, "What are the majority of companies doing about so-and-so?" has sometimes pained the staffs of these management organizations, who have feared that company decisions were going to be based solely on the figures they gave. But, according to S. Avery Raube, director of the personnel division of the NICB, one of the most assiduous of management organizations in col-



lecting such data, there has been a sharp falling-off in this tendency in the last five years. Unlike some experts, who believe comparable data of comparable companies have a strong place in determination of corporate personnel policies, Raube thinks that even here the concept of doing what the majority does is apt to lead a company astray.

A personnel man from a large, multi-plant, multi-division food company, sees nothing wrong in a written company policy assuring comparable rates and conditions in a given area—if it is understood and agreed that when maintenance of such rates and conditions, if it becomes uneconomical, will result in closing down of the specific plant and transfer of operations to one in which more favorable conditions may be equitably used. This constitutes following the leader—but not to the extent of sacrificing company interests to a desire to be in the swim.

These *Can* Be Guides

The argument against checking company practice with general practice may fall down where the practice concerned is a good one. An annual survey of factories using electric lights or power—to choose an absurdly easy example—would have shown a constantly increasing percentage from, say, about 1890 onwards, and the early management that jumped on that bandwagon assuredly was getting in the right parade.

Similarly, although periodically someone mounts the rostrum and assails the wholesale adoption of aptitude testing, human relations training, or executive development programs as a succumbing to fads, or follow-the-leaderism, even the critics will admit that testing has eliminated many of its early bugs and is becoming applicable in an increasing area of employment; that handling people well is of increasing importance as the size of industrial units increases; and that there is room for improvement in the teaching of managerial skills.

It is unthinking application of an ill-suited program of testing, training, or development that is responsible for most of the revulsion against such new or comparatively new techniques and procedures. One aircraft company, for instance, was impressed with the results of a human relations training program in a large corporation. So the aircraft company adopted the other concern's program, almost lock, stock, and barrel—but gave it only to lower levels of supervision, whereas the pioneer it was copying had included higher-level management. When the program failed to produce much tangible improvement in the aircraft company, its sponsors joined the sour-apple chorus: To them, human relations training became an overvalued fad.

Diversification, a popular idea since World War II, has become a sneer-word in some quarters as many companies drop products in a retreat from ill-conceived or, in any case, unsuccessful diversification. But Charles H. Welling, of the management consulting firm of Welling & Woodard, is a man who would deny that these companies were simply playing follow-the-leader and stubbed their toes because of it.

The economic and political changes of the last 25 years have made it imperative for companies to diversify for growth and stability, he says. Taxes are such that a single-line company cannot accumulate enough funds to grow faster than the general economic growth of the nation—but if they are to satisfy their stockholders in a period of continuing inflation, they must grow faster than that.

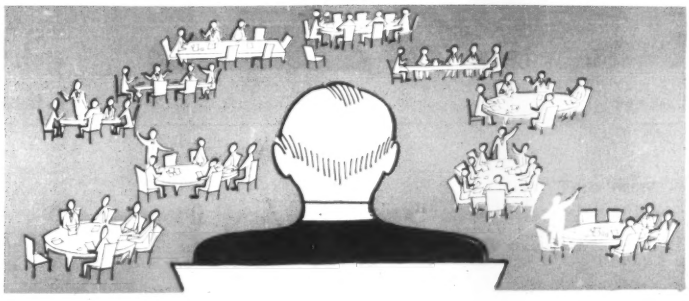
An advocate of diversification by merger, as quicker and less costly than by research and development (at least for small and middling companies), Welling sees only two possibilities for most such concerns—acquire or be acquired. The motive for diversification, therefore, is almost universal, and a company acting upon that motive is not bandwagonning—it is attempting to obey a law of economic and political nature.

The errors a company may commit in diversifying, he contends, are bad timing or attempting to be senior partner in a merger when the corporate funds and managerial talent rate only junior partnership. Accordingly, he has advised one prospective client, for example, to get his present operation on an efficient basis before hiring a consultant to help him diversify, by whatever means. Having cleaned up one of two operating divisions two years after receiving this advice, the company president asked if it were not now time to begin planning diversification. Welling sent him back home to clean up his second division first.

A company may wait too long to diversify—it may be so weakened it cannot be an effective senior partner in a negotiation. Or it may jump the gun by diversifying too soon, not only confronting its management with their new problems, but with the task still remaining of putting their original house in order.

The diversification that fails, fails because its timing is wrong, or its working out of the solution is faulty. This is where the outside look helps.

YOU CAN IMPROVE EXECUTIVE MEETINGS . . .



. . . If You Can Sense, Diagnose, and Solve These Subtle Blocks to Teamwork

HUGH A. GYLLENHAAL

IF YOU ARE a top-level executive in almost any business today, chances are you spend as much as 40 to 65 per cent of your work week in some kind of meeting—large formal meetings, routine staff and committee meetings, and endless spur-of-the-moment get-togethers.

You are probably well aware that conferences are the greedy consumers of countless executive manhours, and you may have an uneasy suspicion that a good many of these expensive hours are wasted effort. On the other hand, today's many-faceted business problems frequently require the joint thinking of several persons or departments. Most executives agree:

- that meetings must be held before most important decisions are made.
- that meetings are vital communications tools whereby much of the organization's information gets conveyed upwards, downwards, and laterally.
- that meetings are often important testing grounds for new ideas on new products, processes, marketing strategy, policy, and so on.

Even if we eliminate a lot of meetings (and we can often safely do so), we should be looking for new ways to improve those that are crucial.

Improve meetings? Hard-headed executives usually shrug hopelessly at that. "Won't we always have meeting problems as long as we have people? And what can you do about people?"

As a matter of fact, research on improving group productivity—plus a growing body of experience—has been proving for some time that you can do a good deal about people, at least about the way they work together in a meeting.

But before we can consider how to improve meetings, we must first look at what's wrong with them. Here we can consider the findings of surveys in which executives have been asked to identify the major blocks to productive meetings. In the food, oil, and chemical industries, in large corporations and small businesses, in advertising agencies and management consulting organizations, everywhere the pattern is similar; certain common problems seem to plague us all:

1. One member dominates, whether or not he has an important contribution to make.
2. Members depend too much on the leader or chairman.
3. Some members do not participate, or do so half-heartedly.
4. Meetings get off the track.
5. The discussion does not cover the complete agenda.
6. Decisions are not pinned down, and there is poor follow-up in consequence.

What can be done about such blocks to productivity? No "Ten Steps to Meeting Efficiency," formulas, or panaceas will solve these problems. What is needed is a creative, diagnostic approach to what are essentially human relations problems.

On the following pages, six common meeting problems are shown. Below each picture are listed a few of the diagnoses and the steps taken by other executives or suggested by research. If you can picture yourself in each situation and imagine what you would do about it, then compare your diagnosis with others'; you may discover differences that are worth thinking about.

This is not to suggest that the "best" solutions are given here. There are no "best" solutions. Every situation differs slightly from the rest and each of us may have a slightly different approach. Your own approach may work best for you.

Assume you are the meeting chairman (although you might just as well be a member of the meeting) and study each picture from the point of view of the leader:

First, diagnose the problem: *What Is Really Going on Here?*

Then, plan your action: *What Could I Do to Solve the Problem?*

To make this a test of your own diagnostic skills versus those of others, *try to come up with your own action plan* before looking over the ideas listed below each picture.

case studies on following pages
text continued on page 148

Case No. 1

SITUATION:

George supplies answers most freely, takes part in every interchange, does not listen well to others, and seems to cause others to participate less.

DIAGNOSE: "What's going on here?"

PLAN: "What could I do?"

. . . with me? . . .

Am I prejudiced either for or against George?

Am I alone in seeing him as a dominator?

Could I be the cause of his acting this way?

Evaluate my own actions leading up to this situation.

Evaluate George's ideas rather than his personality or position.

. . . with George? . . .

Does he know more than the others about this subject?

Is he really trying to help? Or does he have some axe to grind?

Is he seeking leadership?

Is he suffering from lack of status? Or is his status high for this group?

If George is an important resource, help clear the way to get all he can offer without offending others.

If George is not contributing enough for the time allowed, ask him to summarize his thoughts in a few words.

Give George a chance to talk about himself to satisfy his need to be recognized.

. . . with the group? . . .

Has the group accepted George?

Are the members trying to understand what he is saying?

Is the group taking its responsibility for the meeting's outcome?

Put the problem to the group as a matter of procedure: "How should this be handled?"

Ask the group to stop and observe, "What's going on here?" as a normal procedure.

Review actions of the group leading up to this situation.

Case No. 2

SITUATION:

Members generally exhibit an unwillingness to help make the decision. They look to me, the leader, to make most of the moves.

DIAGNOSE: "What's going on here?"

PLAN: "What could I do?"

. . . with me? . . .

Do I have faith in this group's ability to make decisions?

Am I afraid to involve others in decision-making?

Am I unwilling to take the time to involve them?

Re-examine my own attitude toward this group.

Think through the possible effects of delegating the decision.

Re-assess the time available versus the values of involving the group.

. . . with the group? . . .

Are the members accustomed to seeing me in the role of the "expert" or the "boss"?

Do they really believe that I want them to make the decision?

Do they feel they can do the job?

Are they unwilling to take the responsibility should the decision be wrong?

Is this task in their area of responsibility?

Explain that I would not have called the meeting if I could have made the decision myself.

Explain my role, to help them make the decision.

Discuss problems of decision-making; offer to get them facts, other resources, and so on.

Think through with them how the decision affects them and others.

Make certain that this task belongs with this group and that the members accept responsibility.

Case No. 3

SITUATION:

Harry and Bill both remain silent during most of the meeting; they appear listless, uninterested, possibly unhappy.

DIAGNOSE: **PLAN:**

"What's going on here?"	"What could I do?"
. . . with me? . . .	
Have I allowed a stiff, formal, or threatening atmosphere to develop?	Admit my own lack of knowledge on the subject and my need for help from everyone in the meeting.
Am I doing all the talking?	Think over my relationship to these two and how I have handled them so far.
Could I be rubbing these two people the wrong way?	
. . . with Harry and Bill? . . .	
What is the relationship between these two?	Talk to each outside the meeting to see if anything is wrong.
Are they well-enough informed on the subject?	Watch for the chance to bring them in without pressure.
Do they know why they are here and what they are supposed to do?	Re-explain roles of members in this meeting.
Were they forced to attend?	Review reasons why these members were selected.
Is either one the "quiet type"?	
. . . with the group? . . .	
Are the other members opposed to these two for some reason?	Suggest that each member present his views on the subject to broaden our thinking.
Is the whole group uninterested at this point?	Assist the group to develop a standard for encouraging all members to participate.

Case No. 4

SITUATION:

Tom repeatedly leads the meeting away from the appointed task to a related subject.

DIAGNOSE: **PLAN:**

"What's going on here?"	"What could I do?"
. . . with me? . . .	
Am I clear myself as to the purpose of the meeting?	Review and clarify objectives in my own mind and as now seen by the group.
Have I made the purpose clear to all members?	Avoid becoming antagonistic toward Tom so as to sense the real problem more clearly.
Do I understand what this other course of Tom's represents?	Try to see the situation through Tom's eyes.
. . . with Tom? . . .	
Does he understand the purpose of this meeting?	Attempt to relate his interest directly to the task.
Does he want to avoid the main issue for some reason?	Ask him to explain his interest in the main task.
Could he have a personal problem of greater importance to him?	
. . . with the group? . . .	
Do the others realize he is taking them off the course?	Test group understanding of the goal of the meeting.
Are they clear about and committed to the stated course?	Put it up to the group: Do the members want to pursue this related subject or the main issue?

Case No. 5

SITUATION:

You prepare and distribute the meeting agenda beforehand, budget plenty of time, but never get agenda items covered completely or have to give them cursory treatment because of time pressures.

DIAGNOSE: "What's going on here?"

PLAN: "What could I do?"

. . . with me? . . .

Am I assuming too much about the others' willingness to go along with my agenda items?

Am I keeping my own thinking flexible so as to adapt the agenda to new developments in the meeting?

In planning the agenda, have I thought in terms of members' needs and objectives?

In general, plan to involve the meeting group in preparation of the agenda from the start so that this responsibility is shared.

Circulate agenda to members beforehand for their approval or additions.

Budget time in terms of members' interest and ability to help.

. . . with the group? . . .

Are the members really committed to working on the agenda I propose?

Do they feel they are here just to help me out—or to work on matters of joint interest?

Ask members to review and approve agenda at the start of the meeting; list agenda items on chart pad or blackboard if possible.

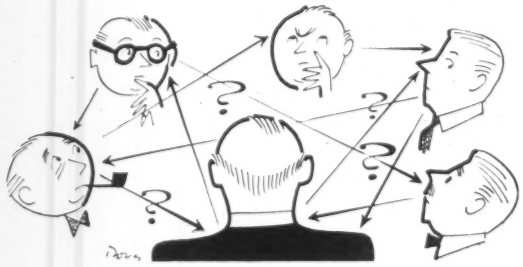
Ask group to decide on time and priority for each item.

Review progress from time to time during the meeting and ask group to set new time priorities.

Case No. 6

SITUATION:

Agreement is reached and decisions are made during the meeting, but members fail to follow up on decisions.



DIAGNOSE: "What's going on here?"

PLAN: "What could I do?"

. . . with me? . . .

Am I clear on the meeting objectives, and have I made them clear, concrete, and specific to the members in the first place?

Have I thought through all the problems of follow-up, implications of decisions, who should do what, and so on?

Continually keep objectives clear and obtainable.

Try to imagine myself in the position of those who must carry out the decisions.

. . . with the group? . . .

Has this group the authority to carry out this decision?

Has each member understood his responsibility clearly from the beginning?

Have assignments been pinned down in concrete terms?

Have dates and times been set for what happens next?

Invite those responsible for decisions to the meeting, and involve them in the discussion.

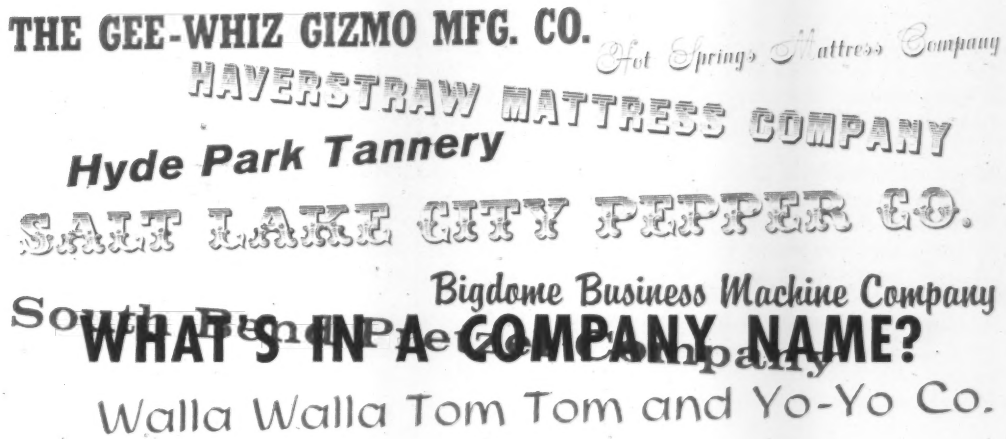
Ask the group to appoint a recorder to note decisions made, assignments, next steps, and so on.

Test practicality of decisions in view of possible effects on others.

At end of meeting, recheck who does what, where, when, how.

Schedule and get commitment for a follow-up meeting.

text continued on page 148


THE GEE-WHIZ GIZMO MFG. CO.
Hot Springs Mattress Company
HAVERSTRAW MATTRESS COMPANY
Hyde Park Tannery
SALT LAKE CITY PEPPER CO.
Bigdome Business Machine Company
WHAT'S IN A COMPANY NAME?
Walla Walla Tom Tom and Yo-Yo Co.

Your company's name can help or hinder its success; and making a wise choice is harder than most people think.

JAMES M. VICARY

THE PROBLEM of creating good, new company names—once hardly thought of as a problem at all—is becoming a more vital concern of management every year. In the nation's business community an astonishing number of executive manhours are being invested annually in the solution of corporate naming problems, and a whole new research discipline has been developed to aid the business man in coming up with the right answers.

What has stimulated this new concern?

Partly, it grows out of the vast increase in the number of active businesses. The market for good names, like some other markets, is today highly competitive. The swelling wave of mergers only adds to the problem, because a group of merged companies is a new business needing a new name. Moreover, the names of constituent companies, whether or not they are retained as division names, are rarely, if ever, available thereafter for use by outsiders.

Also, there is the expanding scope of many businesses. The whole range of names chosen to suggest wide-scale operations—"American," "National," "United States," "Continental," "North American," and so on—has been so thoroughly exploited that any distinction is lost or imperiled.

A number of research studies indicate the unsuspected factors that must also be considered in picking a name.

Research shows that "American" has not suffered degradation as a prestige symbol. But the astute executive thinks twice about calling his company (or merged companies) the "American something-or-other" when he notes that Thomas's Register lists some 990 "Americans"—and these are only the leading industrials. If he happens to check the Manhattan telephone directory, for instance, he'll see that there are around 2,300 "Americans" listed.

Over-Specific Names

Paralleling this problem is one that springs from selecting (or being presently hampered by) the name of a specific geographic location: "Chicago," "Wyoming," "Brooksville." To the fringe group of investors, customers, or clients who may not be completely familiar with the company's scope, such names can be undesirably limiting in their connotations.

Other companies have, through diversification, broken out of the confines implied by the over-specific company name. Among companies that have revamped their names recently for this reason are General Dynamics (formerly Electric Boat Co.); Worthington Corporation (Worthington Pump and Machinery Corporation) Anaconda Company (Anaconda Copper Mining Corp.); and many others.

You can change your own name with slight expense, but to change the name of a going business can run into many thousands of dolars. In addition to obsoleting forms, letterheads, records, and so on, a corporate name change frequently involves an extensive advertising campaign to bring the fact to the attention of the business community and the general public.

Trademark into Trade Name

A way out for a company that is being hurt by a poor name is to adopt the name of its leading brand.

Others seek the added recognition that a well-advertised and widely known trademark can bring to the company name. (A trademark is the name or symbol for the product, while the trade name is the name of

the company.) Among the companies that have recently changed their trade names to include the trademarks are the following: Venus Pen and Pencil Corporation (formerly American Lead Pencil Co.); Green Giant Co. (Minnesota Valley Canning Co.); Oakite Corporation (Oakley Chemical Company); Socony Mobil Oil Company, Inc. (Socony-Vacuum Oil Co.); and Four Roses Distillers Company (Frankfort Distillers Co.).

The advantages of including the trademark are obvious—simplicity, identification of company with its best-known product—but often there is no branded product involved or there isn't a brand name in the line of enough stature to stand as the company name. In other instances the change would be unfortunate because of the implied de-emphasis of other products or services.

Initials

Initials are coming into increased prominence in company trade names. To a large extent it is in recognition of a *fait accompli* when a company changes its name to the abbreviated form used by customers, suppliers, and others. For example, Aircraft-Marine Products, Inc., recently changed its name to AMP Inc. The company sent thousands of announcements to dealers, customers, suppliers, and others, using an eight-page greeting card titled, "You Called It." It went on to explain that, although the company originally adopted the name "Aircraft-Marine Products, Inc.," everyone called it AMP. So the company bowed to the common usage and dropped the longer name.

Other companies that have telescoped their titles are Armco Steel Corp.; Philco Corp.; ACF Industries Inc.; Avco Manufacturing Inc.; and AMI Inc.

So in selecting the name for your company, you should also keep in mind the manner in which it can and probably will be abbreviated by the business community. The United States Trademark Association advises companies:

"In selecting your trade name, consider whether it may be abbreviated without conflicting with an existing trade name or trademark. If you plan to make billing machines, a name such as 'Indiana Billing Machine Company' may not be desirable, not only because it has no distinguishing aspects, but also because you could not abbreviate it to IBM without probably infringing the trademark and nickname of International Business Machines Corporation."

In part, the concern over company naming and names only reflects a growing recognition that there *is* a problem—that the name itself is an important element in the total public relations picture. If a company's name takes on connotations traceable to the experience people have with the company and its products over the years, this is not exclusively a one-way street. The company itself is affected for good or bad by the connotations of the name standing alone.

This was noted in a recent study in which many personal names were tested in the process of renaming a home-building company. For comparison purposes the "personal-type" name of a not too-well-known competitor was introduced into the lists sent into the field. The name brought forth a surprising proportion of negative reactions and associations. These responses, it should be pointed out, were not prompted by personal experience with the company. Respondents just didn't like the name—and in sufficient numbers for there to be a strong probability that the company's "communications" with the public are being adversely affected.

The Family Name

The roster of American industry reflects the understandable human urge of business men to name their corporate creations after themselves. Even close to the apex of American industry, surnames are common as trade names: Ford, Chrysler, Swift, Armour, Goodyear, Firestone, Sinclair.

Anyone has the right to set up a company and name it for himself—with the limitation, of course, that he is not trading on the good-will and reputation of a firmly established, identical name. For instance, the courts would certainly enjoin any of the thousands of people named "Ford" from setting up another Ford Motor Company.

But there is one very distinct drawback in using your surname for the company title. When you plan diversification a few years later, you may

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HOW TO MAKE A NAME STICK

Besides being psychologically in tune, your company name must stay clear of legal snarls if it is to grow into a valuable asset. Unlike trademarks, trade names (or titles of corporations) cannot be registered with the U.S. Patent Office. Instead, you must look to the secretaries of individual states for protection. Along with the right to do business, a bright new name is one of the things a new company gets in its state certificate of incorporation.

Legal clearance for whatever name you plan to adopt is a prerequisite. In the field of law, as in medicine, the emphasis today is on preventive measures. The alert business man knows it pays to consult a lawyer to avoid pitfalls rather than to employ one later to pull him out of a hole.

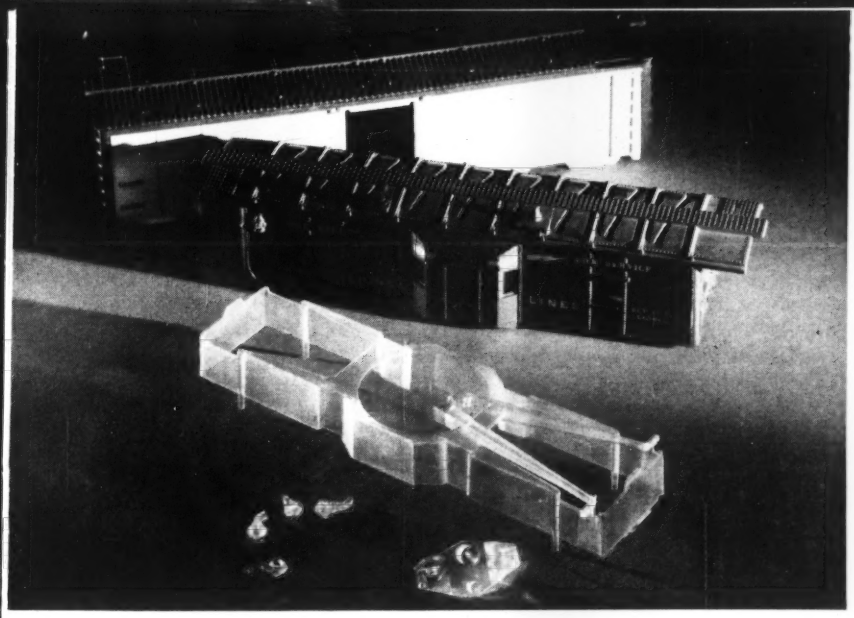
In picking a name for your new enterprise, remember that the name must meet these legal requirements:

1. It must not infringe on the name of an established company. It must not bear too close a likeness to any domestic or foreign (to the state) company authorized to do business in the state. In most states authorities are directed by law to refuse to charter companies with infringing names.

2. The name should not be too broadly descriptive, but instead should have some clearly distinguishable feature. You should not consider a name such as "The New York Company" or "The Office Equipment Company." Even were they chartered, they would be too vulnerable to infringement to make it possible for you to build up property rights to defend in a court of equity.

If you choose a name that lacks distinction, you may be opening the door to credit frauds that can tarnish your entire business reputation. Credit swindlers frequently set up a phony company with a name resembling that of a going business. After your regular suppliers ship them merchandise, they quickly dispose of it in underworld channels for a fraction of its price, and vanish leaving the creditors on your doorstep.

3. The trade name must not misrepresent the nature of the company. Unless you actually do produce goods, don't include the word "manufacturing" in your trade name. And unless your plant is located in an area renowned for its workmanship, don't include the geographical term in your title. The Federal Trade Commission frowns on all forms of misrepresentation in company trade names. For example, recent FTC decisions lead Amity Mills Inc. to drop the word "Mills" and induced Invisible Reweaving Institute to delete the word "Institute" to avoid the impression it is an educational institution.



New opportunities to build better-looking, more realistic products at moderate cost open up as new grades of polystyrene become available. Lionel Corporation uses several types in molding train bodies, headlamps, and other train parts; also puts this useful plastic to work on its production line. Makers of electrical appliances, chemical equipment, pharmaceuticals, and food products, can also profit from this old-but-new material.

From patterns to pillboxes with POLYSTYRENE

ANNESTA R. GARDNER, *Industrial Editor*

PLASTIC that's an old-timer in its field is opening a new approach to product design and bringing happy smiles to production and sales personnel in many fields.

An appliance manufacturer is using it to build new user-benefits into his products.

A toymaker is putting it to work on his production line.

Makers of power lawn mowers and industrial trucks find it makes durable, inexpensive wheels, handles, and housings. In packaging and automatic vending, it's opening up new horizons in convenience, disposability, and reusability.

And this venerable plastic is liter-

Disposable or reusable—polystyrene users can take their choice. Premium Plastics, Inc., which molds these containers, recommends standard, crystal-clear grade for maximum visibility; milky white impact-resistant types where durability is important.

Photographs by F. M. Demarest

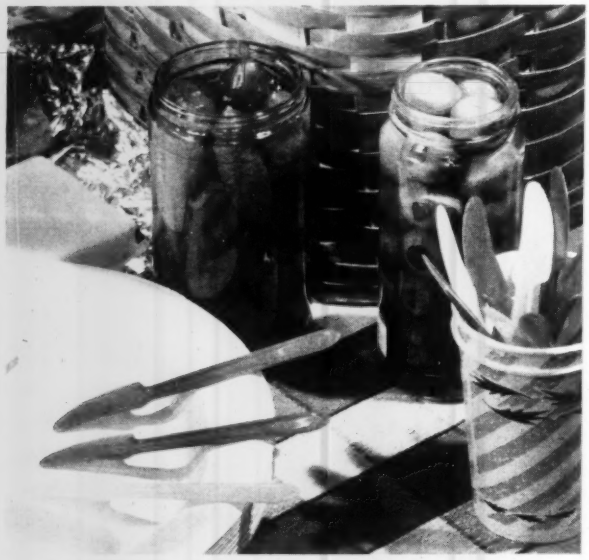
Resistant to water and chemicals and easy to mold, polystyrene is a good choice for parts like these. Shaw Insulator molds steam iron reservoir (left); Dow *Styron* is used for washing machine impeller (center); Landers, Frary & Clark makes vacuum bottle.

Polystyrene offers these advantages

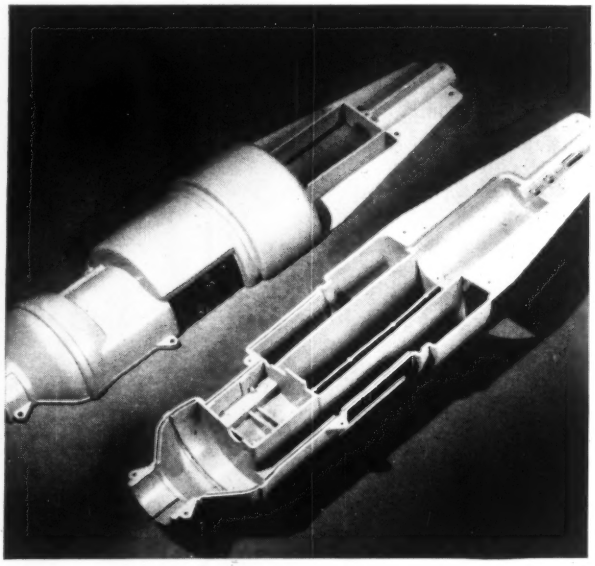
• Light in weight . . . clear as glass . . . easy to color . . . dimensionally stable . . . rigid yet springy . . . low in cost . . . readily available in large quantities . . . water-resistant . . . and having a hard, scratch-resistant surface.

This is polystyrene in its standard form, and there are now plenty of special grades to answer the need for materials with improved chemical and physical properties.

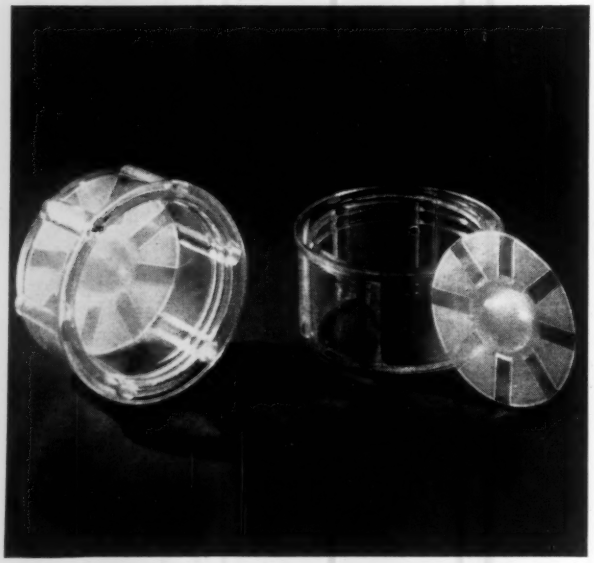
The important thing, as suppliers and molders emphasize, is to make sure that the right grade is used for each specific job, and that products are designed for the plastic, rather than trying to force the plastic to fit a preconceived design.



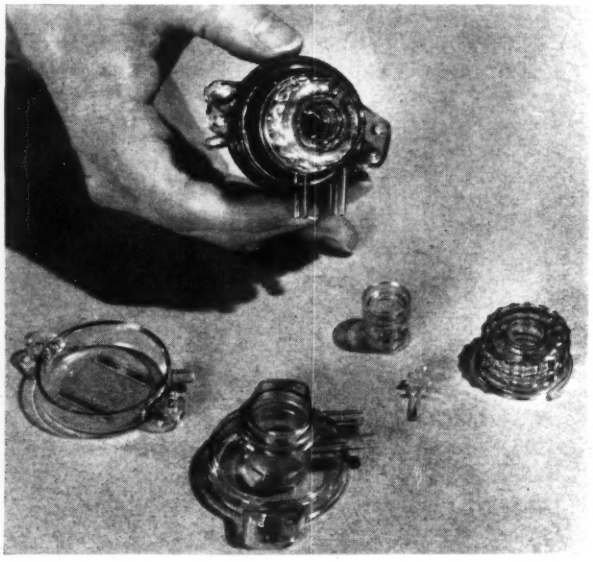
Rigid, yet springy, polystyrene takes a sharp edge, is good choice for picnic knives and other low-cost items often made of metal. These, molded by Federal Tool Corporation, retail at eight for 10 cents, won honorable mention in Koppers design contest.



Easy to mold, polystyrene can take complex forms; and the Bakelite high-impact grade used for this lightweight Junior Electrikbroom housing also offers good mechanical strength and a smooth, glossy surface. It can be obtained in a wide range of colors.



Chemical resistance permits use of polystyrene in many food, drug, and chemical products. These acid bottle closures, molded by Owens-Illinois, are specially designed to relieve internal pressure. Polyethylene is used for liner to provide resilient seal.



Electrical insulation, plus attractive appearance, moldability, resistance to crazing, and dimensional stability, explain choice of polystyrene for these home appliance control unit parts. Molded by Mack Molding for Electrolux, they're made of Bakelite resin.

ally "building a better mousetrap."

A new rodent-eliminator is made in the form of a dome-shaped plastic cage, coated with a thin film of zinc so that it will conduct electricity. The coating process itself is new, and may well open up other electrical and electronic applications, including, perhaps, a new type of printed circuit (see January, page 43).

Yet, mention the name of this plastic—polystyrene—and many people will tell you that it's "on the way out." Not long ago, its future did look bleak. Newer materials like polyethylene were taking over many of its "traditional" applications in refrigerator dishes, drinking tumblers, toys, and novelties.

Its engineering applications seemed limited by the fact that its advantages—clarity, ease of coloring, moldability, light weight, rigidity, moisture resistance, low cost—were offset by a good many limitations. It was glass-clear, but it was also almost glass-brittle, and it tended to yellow with age. It also had a rather low softening temperature—well below the boiling point of water.

Within the past few years, though, heat and chemical resistance, light stability, and impact strength have all been improved; and manufacturers in a wide range of fields are taking a new look at polystyrene.

Helene Curtis, for instance, is using polystyrene in a key component of its new *Holiday* hair dryers: the fan assembly. Curtis engineers say that the molded polystyrene impeller, which replaces a cast magnesium part, is quieter and smoother in operation and much easier to produce. The styrene unit can be injection molded complete with ribs and fastening holes, and needs none of the special machining and balancing operations that were required for the metal part.

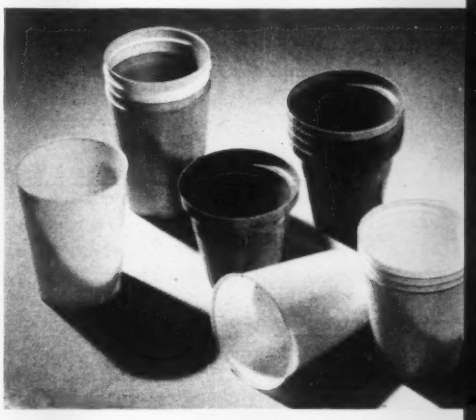
At Landers, Frary and Clark, well-known appliance manufacturing concern, new impact-resistant grades of polystyrene are opening up a new approach to vacuum bottle design. Says LF&C: "We can now build a pouring spout right into the rim—something that could not be done in metal—provide much better support for the glass filler, and use a new type of shoulder-case attachment that makes it impossible for the shoulder to come off when the cup is removed. Furthermore, the new design eliminates a whole string of pro-

Here is how it can improve your product

Sales appeal can be added to old products as well as new by taking advantage of polystyrene's special qualities. On the one hand, new formulations permit design of more durable products and packages in new shapes and sizes. On the other, the standard grades of polystyrene are excellent materials for many disposable items.

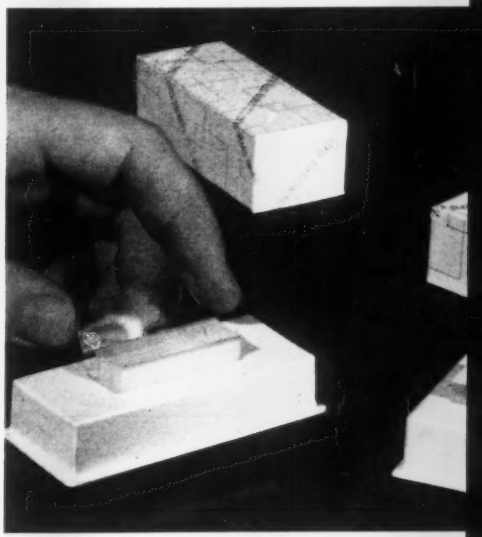
Polystyrene works well with other plastics. For instance, polyethylene is often considered styrene's biggest competitor. Yet in many products the two do a better job together than either could do alone. The acid bottle closure (opposite page) and the containers below are good examples. Polystyrene provides needed rigidity and visibility, while polyethylene provides the flexibility that assures a tight seal and reduces breakage.

Reusable container provides attractive premium for cottage cheese producer. Made of Bakelite C-11, these tumblers won't stain or shatter, can be washed in hot water.



Disposable cups, containers, and flower pots, molded by Crown Plastic Cup Company, are competitive in cost with similar items made of more standard materials.

New twist in drug packaging is this one-at-a-time dispenser cap molded by Lermer Plastics. Container itself is break-resistant, weighs only a fourth as much as glass.



Better protection is provided for Corning brand optical cover glasses by molded plastic case. It replaces conventional wrap, is easier to pack, also serves as dispenser.

duction and finishing operations so that, although the initial materials cost is higher, the finished product is no more expensive than its predecessor."

[Polystyrene's specific gravity is less than 1.1, and the standard grade costs only 28 cents a pound (impact-resistant materials average 36 cents). That makes polystyrene light in weight, even for a plastic, and one of the least expensive. It still cannot compete with sheet steel when it comes to initial cost. But savings on the production line, plus added sales appeal, can more than offset this disadvantage, as they do in the LF&C vacuum bottle.]

At Lionel Corp., polystyrene is also a primary material of construction (see page 57). The impact-resistant grades make durable, realistic train bodies. The standard, crystal-clear molding resins are used for train windows, headlamps, and other parts normally made of glass. They not only look like glass, but also "pipe" light so a lamp located inside the train can light up the headlights and other signals. Furthermore, polystyrene, though relatively brittle, does not shatter into dangerous splinters.

Lionel also has an interesting use for polystyrene on its production line—in making the bar magnets used in its *Magne-traction* system.

Molded polystyrene bars serve as patterns for a special type of investment casting developed for magnet manufacture. The polystyrene patterns are encased, or "invested," in plaster to form a one-piece mold. Then the mold is heated to vaporize the plastic and leave a cavity into which the magnet metal can be poured. Joseph L. Bonanno, Lionel chief engineer, says polystyrene offers greater dimensional stability and ease of handling than the wax patterns normally used for this process, and the plastic vaporizes completely so that no residue is left to interfere with perfect reproduction.

These examples and those shown on the following pages certainly indicate that polystyrene is very, very much alive. Production figures prove the point. Last year, production of styrene resins (including foamed and cast materials) was over 600 million pounds—second only to the vinyls. That's 4 per cent above 1955 and a good 40 per cent over 1950.

Polystyrene suppliers—companies like Bakelite, Catalin, Dow, Koppers, and Monsanto—now offer several break-resistant formulations as well as the standard grades. In addition, special sheet materials are obtainable from such companies as Chicago Molded Products, Goodyear Tire and Rubber Company, Nixon Nitration Works, and Plax Corp. Among these materials are "oriented" sheets, offering increased tensile and impact strength; shrinkable sheets (so far used primarily in toy kits); and sheet materials especially designed for deep drawing and forming.

American Cyanamid is readying a group of resins known as methylstyrenes, which are said to combine the desirable transparency, rigidity, economy, and moldability of regular polystyrene with heat resistance (to 212° F). These, too, can be modified (by copolymerization with acrylonitrile) to obtain tougher, craze-resistant grades.

As would be expected, such advantages as improved moldability and impact resistance are not usually obtained without some sacrifice—either in cost or physical properties or both.

To gain impact resistance, for example, it has been necessary to sacrifice some of the gloss and some of the clarity characteristic of the standard materials. Recently, though, medium-impact materials with good transparency have appeared on the market.

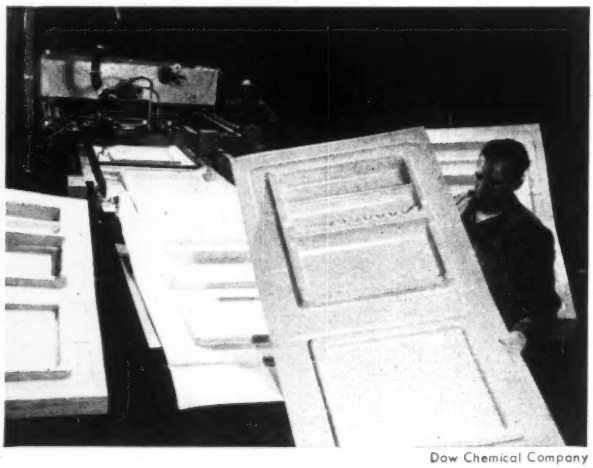
But compromises like these must be made with any material; and, with all the grades that are now available, it should be possible to find one to meet almost any need. Certainly, any company making products like those pictured here, or looking for a material with the combination of properties described above, would do well to make sure this plastic is considered along with the newer, and perhaps more glamorous, plastics.

As Earl S. Tupper, president of Tupper Corporation, points out, some of the newer plastics are today being used in applications where polystyrene would do a better job. Molders have become polyethylene-minded or nylon-minded as they once were styrene-minded. Perhaps, the pendulum has swung too far.

How polystyrene parts are made

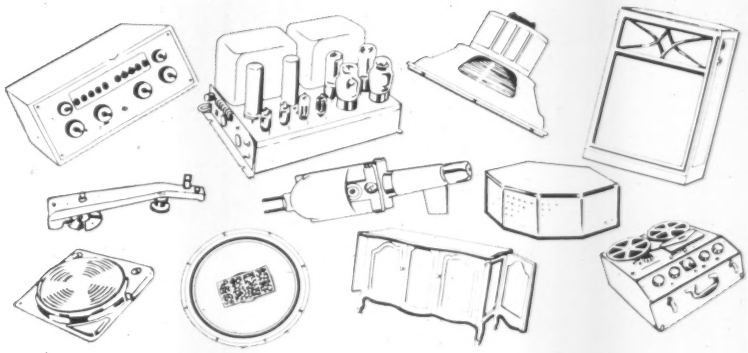
Catalin Corporation

Injection molding is standard fabrication method, can produce several parts at a time, as it does for chandelier prisms shown here.



Dow Chemical Company

Sheet forming can turn out large parts like refrigerator door liners. These are made by General American's Plastics Division.



HI-FI:
BIG BUSINESS FOR SMALL BUSINESS

Large manufacturers are now moving in, but small companies on the ground floor aren't worrying

WALTER F. GRUENINGER

WALK ALONG the main street of any city of 50,000 or over. You're likely to find more hi-fi and phonograph record stores than book stores. Yet a generation ago "hi-fi" wasn't in our vocabulary, and phonograph records were checked off as obsolete.

What is this new cultural force, and how does it affect industry?

"Hi-fi" is an abbreviation of high fidelity. It refers to an electronic system that reproduces sound closely approaching the original. Most often the sound reproduced is music from a phonograph record—Belafonte to Boston Symphony.

Hi-fi also generally implies the assembly of components—pickup cartridge and arm, turntable, amplifier, loudspeakers in a separate cabinet.

More than 25 years ago the Consumers Research Bulletin pointed out that this means of reproducing sound was superior to the common radio-phonograph set. The assembly of components became a hobby of men interested, principally, in the faithful reproduction of music, both electronic engineers and music lovers. World War II delayed the immediate spread of the hobby; but because of the tremendous advance of electronics then, hi-fi was on its way by 1945.

Small business men jumped into the hi-fi manufacturing field, while such companies as the Radio Corporation of America, General Electric, Electro-Voice, Stromberg-Carlson, Magnavox, University Loudspeakers, and Altec-Lansing elected to concentrate on bigger markets. Now the larger companies, too, are concerned with the growing hi-fi market, but the small manufacturers are not worried; they hold there is always room for a meticulously built product that appeals to the most discriminating. Let's look at some of these small manufacturers.

Paul W. L. Klipsch was a geophysicist until he ingeniously reduced size by utilizing the walls of the room as part of the horn in a loudspeaker system. In 1945 he went into business for himself, manufacturing a corner horn loading system. Now he employs about ten people.

Emory G. Cook, an electrical engineer, left a big company in 1945 to establish Cook Laboratories, Inc., which manufactures specialty phonograph records and sound recording equipment. He has about 25 employees, and his records include such off-

continued on page 163

Photographed by David Gahr

As consumer interest in hi-fi has intensified, retail outlets have also expanded to keep pace with the rise in record and equipment output. Sam Goody's, New York, for example, began in 1948 as a record shop, now has two stores in New York and one in Pittsburgh.

Mr. Grueninger is the circulation director of DUN'S REVIEW AND MODERN INDUSTRY.

DYNAMIC BUDGETING

Getting the Most from Your Program

JAMES D. WILLSON, *Vice President-Finance,*
The O. A. Sutton Corporation, Inc.

It costs money to budget, and like any other activity budgeting should pay its way—by encouraging cost control and making it easier to answer the question, "How are we doing?" Here are some pointers from a top authority on budgets and budgeting.

BUDGETS and budgeteers are likely to be unpopular with executives down the line. The department head tends to resent his budget; he may even spend more time and energy thinking up good reasons for exceeding it than he does trying to keep within it.

Nor are budgets always an accurate guide for top management decisions. They can, and often do, arouse dangerous complacency by making it appear that costs are under close control when they are actually rising unduly. Figures cannot lie, but in the form of a budget they can easily mislead.

The fault, however, does not lie with budgets per se, but with the way they are compiled and used. Here, for example, are common symptoms of the wrong kind of budgeting:

1. *Information on budget performance comes too late to do much good.* You don't get figures on June performance until the 25th of July—fully 55 days after some of the costs were incurred.

2. *No account is taken of the level of activity*—and the extent of your cost control is misrepresented in consequence. Let's say your company planned to manufacture 15,000 air conditioners, and the budgets were drawn up on this basis. But actually only 12,000 were produced. Particularly in the expense area, a budget for a level of 15,000 does not fairly measure performance at a 12,000 level.

3. *Changes in plans make the budget inoperative.* Quite aside from volume of production, the activities that occur may differ widely from those budgeted for. A change in the product mix or the method of manufacture, for instance, can make the budget quite meaningless.

4. *The company budgetary planning doesn't cover all activity.* Sales may be budgeted but not expenses. Manufacturing expenses may be budgeted while selling expenses are left largely alone.

5. *Department heads and supervisors find the budgets difficult to work with.* Sometimes the budget reports are too detailed, and are presented in a form confusing to anyone but an accountant. Or the budget reports don't show the expenses the department head or supervisor can control. Or they don't tell him *where* he is over the budget.

Do any of these complaints have a familiar ring? If so, you are not alone. Many business executives are plagued by them.

Preventive Budgeting

A partial answer to two of the difficulties (Nos. 1 and 5) lies in preventive budgeting, a method that makes it harder for the responsible executive to exceed the budget without doing so deliberately, and automatically centers his attention on the expenses over which he has control.

How is this done? Simply by accumulating costs of requisitions, *before* they are put through, and deducting them from the balance left after continuing expenses are provided for. Here are the suggested steps:

1. The budget director, or one of his staff, determines the allowable budget for departmental expense for the accounting period—usually one month.

2. The current level of continuing expenses—such as payroll—is determined.

3. The continuing expenses are deducted from the total budget—leaving the amount that the department head is more or less free to spend as he sees fit.

4. All requisitions are processed through a control point, often in the budget department, and deducted from the available budget. When a requisition that would send expenses over budget appears, the department head is immediately informed. He may then consider whether the purchase can be eliminated or postponed.

The essence of the whole procedure is the passing of commitment slips through a control point. No complex or specially printed forms are necessary; and if your budget staff is on its toes, there need be no significant delay.

continued on page 128

THE EMPLOYEE PUBLICATION: *A Report on Objectives*

WILLIAM C. LEWIS, *Editor, Dun's Bulletin*

DR&MI survey shows that news of individual employees still holds first place in editorial emphasis in company magazines

WHEN WORLD WAR II ended it was predicted that many employee publications would be discontinued. War plant newspapers and magazines had been created hastily to meet information needs of mushrooming manufacturing establishments, operating on cost-plus contracts. Some war baby publications did go out of existence, yet today *employee newspapers or magazines* reach tens of millions of readers.

What do such publications seek to do? Why does American management foot the bill for this type of business communication?

To find out where editorial emphasis is currently being placed, DR&MI queried a selected sample of 256 companies, all among the leaders in their fields. While manufacturing companies predominated in the sample, commercial banks, merchandising firms, transportation companies, life insurance companies, and utilities were included also.

Questionnaires were sent only to editors of companies having one, or at the most two, employee publications, not those involved in the complexities of supervising many different house organs. The questionnaire was answered by 192 editors, 75 per cent of those queried.

Management Objectives

Editors were asked: "What does *your company* consider the most worthwhile and useful types of news or feature material for employees appearing in your publication either regularly or intermittently?"

Here are management objectives as the publication editors themselves understand them:

The most popular topic was checked as "employee progress—promotions, service anniversaries, distinguished achievement awards, and so on." The two runner-up topics were these: "announce new developments and policy changes" and "describe company products or services."

Next in order of management emphasis, but ranking far below the previous topics, came these two: "explain company benefit plans," and "promote efficiency—suggestion system, safety program, good housekeeping campaign, and so on." Few-

Dad's picture in Metropolitan Life's *Home Office* magazine brings delighted smiles to Mrs. Cornelius Collins and twins, Neal and Patrick. Company editors believe news of individual achievement has top news value.

est votes went to the objectives: "to present financial information about the company to employees," and "to describe sales methods, sales programs, sales outlook." (A majority state, in an answer to a later question, that their companies maintain separate newsletters for their salesmen.)

One editor wrote that his readers preferred news of employee progress, but his department head insisted that editorial emphasis be placed on company services instead.

Another said: "A recent pilot survey (of my readers) showed a surprisingly high interest in personal news briefs, which many companies are throwing out of their publications today." This editor continued, "Another great and much overlooked asset of a company magazine is that it can often imply much that it cannot say in so many words without being obvious. Thus a little personal item, 'John Jones moved into his new home,' is actually a fine plug for the company and the American system." Several comments stressed the importance of economic education and the promotion of closer employee identification with the company's progress and objectives.

Responses to other questions indicate that editors find it far easier to obtain news about employees' progress and about product developments than about company policies, programs, and plans.

"The publication," one man wrote, "should lay the basis for a sound two-way communications program by giving employees the facts—good and bad." Another said he needed to "obtain direct access to top management for information on company policies and future plans." "We hope to have management use the publication more as the official channel of communications," a third wrote. Still another said improvement could come in the form of a "franker discussion of company affairs presented more graphically and understandably." An editor who was already satisfied with the cooperation he was getting from top management reported that department heads were chary with news.

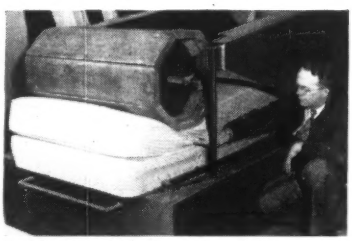
continued on page 121

For that important ⅓ of their lives –TUFFLEX cushioning

They'll spend one-third of their lives —the sleeping hours—on that mattress and box spring. And those hours will be restful, relaxing, thanks to a new cushion padding. It's Tufflex—the felted cellulose that's making big news in the bedding industry today.

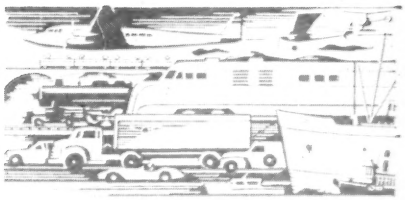
Here's the inside story: Tufflex box spring pads do double duty...they serve both as cushioning and spring insulator. In mattresses, Tufflex provides a one-piece, perfectly uniform, cushion topping. For mattress borders, Tufflex padding creates a tailored or soft appearance as desired. Every Tufflex sleep product has been engineered for maximum production economies and customer satisfaction.

Tufflex in bedding—as in many another padded or cushioned product —adds quality while it reduces manufacturing costs. You may find Tufflex worth investigating for *your* product—write us for facts and samples. Wood Conversion Co., Dept. 239-67, First National Bank Bldg., St. Paul 1, Minn.



In the Tufflex bedding laboratory, "Steam Roller Sal"—a giant 240-lb. roller—tests Tufflex padding as well as other elements of construction. Other tests simulate the wear and tear caused by adults and juveniles on cushioning and sleep products.

FOR CUSHIONING • PROTECTIVE PADDING **TUFFLEX®** INSULATION • SOUND DEADENING • MOISTURE ABSORBENCY OR REPELLENCY



Extra Emphasis Feature

BETTER TRANSPORTATION: *Pathway to Profits*

An eight-part DR&MI report on industrial transportation and how it is being improved.

A FOREIGN ECONOMIST in appraising the dynamics of the U.S. economy pointed first to the movement of ideas, which is *know-how*; then to the movement of purchasing power, which is *credit*; and next to the movement of people and things, which is *transportation*. During World War II and its aftermath, these three combined to amaze the world with our quick shift to a war economy, and the equally rapid transition back to a peace economy, and all with a minimum dislocation to civilian life.

The political unity of these United States is triply bound, state by state, by the glinting steel bands of the railroads, by the rhythmic concrete ribbons of the highways, and the less visible paths of air transport. Distance is no social or political handicap to the exchange of information, news, and ideas.

However, the complexity of our business and social life is reflected in the problems of transportation, problems that will have to be faced and resolved in the immediate years ahead. Patience, skill, candor, and courage, all will be needed to untangle the knots that are handicapping transport progress. First of all, there is the legal tangle of regulatory law dealing inequitably with various types of carriers or arteries of travel. Much of this legislation was con-

IN THIS SPECIAL FEATURE

HOW COMPANIES SPEND $50 BILLION TO MOVE GOODS 68

What are companies in various lines spending for transportation? What are they planning for the years ahead?

TRANSPORTATION COSTS CAN BE CUT 75

How companies are bearing down hard on costs and coming up with surprising savings.

WHERE DOES THE TRAFFIC DEPARTMENT FIT? 89

A detailed survey of 325 companies shows where the traffic manager fits on the company totem pole and how much he is paid.

HOW TO SELECT THE RIGHT CARRIER 94

What you should know about carriers so that you can choose among them like an expert. How Motorola sizes carriers up.

TRANSPORTATION IS MOVING FAST 105

How industrial transportation has changed in recent decades as companies seek new solutions.

HOW WILL GOODS BE MOVED IN 1965? 111

Piggyback, fishyback, and new developments offer glimpses of the shipping of things to come; their effect on moving goods.

DO YOU MAKE THESE COSTLY ERRORS? 119

Dozens of questions about your traffic operations. They point up pitfalls that can cost you thousands of dollars.

ceived for a pioneer era. There is evident need for an over-all and realistic transport code, and the need for the removal of restraints that have outlived their usefulness or purpose.

Technology in the movement of goods via water, rail, air, and pipeline is evolving beyond the high hopes of traffic specialists of a decade past. Industry, as it grows and disperses to serve new markets with new goods, must be able to accept and employ these benefits as rapidly as they are available. It cannot be limited to the thinking and actions of the 19th century mind, or to concepts that are self-centered in any carrier's advantage. It is obvious that shipper and carrier must cooperate as well as compete, and this means an adjustment of sights on objectives, concessions of mutual understanding for common benefits, and a competitive eagerness to provide industry with the quickest, safest, and most effective means of getting to the market and making a profit on the transfer of goods.

Often the Stepchild

Top management in industry has not been so alert to its responsibility in dealing with transport problems as it might be. This is a generality that can be challenged by numerous exceptions, but the fact is evident that management is primarily concerned with product research, processing, and marketing, and has not given sufficient attention to the men and the methods by which the goods get to the market.

At New York and Chicago transportation conferences, conducted by the editorial staff of DUN'S REVIEW AND MODERN INDUSTRY as a fact-finding prelude to the articles on transportation in this issue, the top management responsibility toward the traffic authority was reiterated from various angles by shippers and carriers who recognize the importance of time and money when the finished or processed wares arrive at the shipping dock.

In some companies, the man in traffic authority sits high in the council of management, and participates, not only in decisions affecting purchases and deliveries, but also in the discussions of plant and warehouse functions, and has a voice in any decision where transportation facilities have a bearing on the competitive situation.

In other companies, often in the middle business group, the person responsible for the routing of shipments is a shipping clerk who is often assigned many other duties, especially those of a stock room supervisor. Experience may teach him to be a valuable employee with traffic management potentials, but he is too often left to his own devices.

The qualified traffic manager rates as an executive. He deserves the confidence of management, the responsibility that goes with his job, and the compensation that belongs to the assignment. Transportation cannot be treated as an afterthought, or as an orphan activity. There is increasing proof that it exercises a critical influence on profits during the interim between point of sale and payment for merchandise delivered.

It was also pointed out at the DR&MI conferences that as industry must cooperate as well as compete, so must the carriers in dealing with each other. One of the needs discussed was the necessity for a common bill of lading whereby an item could be scheduled for water, rail, track, or air transport on a single document.

Community Responsibility

The responsibility of the community to the shipper and carrier cannot be overlooked. States, counties, and cities are competing for industry; and they point to their rail, water, and air facilities as bait for the plant owner. But they sometimes forget that the bread has to be buttered on both sides. The attitude of the community toward the convenience and modernization of terminals and the freedom of the approaches is vital to the industry and carrier. The carriers pay taxes, at times disproportionate to their revenues and potentials for growth. Thousands of miles of railroad trackage, valuable as a defense potential alone, have been torn up merely to cut tax bills. On the other hand, many cities, especially those with rail-water-truck terminals, have steadily improved their facilities to service industry and to encourage carriers. Where community funds are invested for better handling of shipments, there are some obvious and many indirect benefits to the local resident.

Thirty-five years ago the city of Newark added a huge arm to New York Harbor with the deepening of Newark Bay, and the development of Port Newark, which is now a prime asset to the community. The Port of New York Authority has shown how to turn the competitive jealousy of two states into a bi-state coöperation for the benefit of 12 million people. Other communities have wrestled with rail and ship side terminal problems and made substantial contributions to industry and trade. Deep water may make a harbor, but commerce makes a port.

Costs

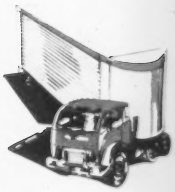
Another subject of discussion at the New York and Chicago conferences was "Transportation Costs and Their Relationship to Profits and Service." Cost accountants with the aid of engineers can provide accurate expense figures as a basis for mark-up and pricing, but the total costs of delivering the manufactured product or raw materials is influenced by variables in accounting methods, disputed elements of expense, and hidden items that are clouded or lost in over-all figures. There is room for considerable improvement in cost-finding in transportation. If time studies can determine fixed costs in office and plant operations, there must be an acceptable pattern for segregating transportation costs with reasonable accuracy. While this is essentially the shipper's problem, the carrier can be helpful with guidance data. Tariff rates are often the haphazard fruit of regulatory and competitive experience, but the cost per ton-mile of moving goods, the cost per manhour of handling, warehousing, and packaging goods, the cost per day, month, or year for fleet operation or maintenance, can be determined by accurate record keeping, and cost analysis. Perhaps all these items can be winnowed out, but they are certainly not known or consistently used by all who could apply them to their cost accounting procedures.

Water and Rail

Water is nature's pavement for the carriers that move bulk materials—grain, sugar, coal, oil, ore, and various liquids. The rivers and canals served the states early in their growth, from the river packets of coves, bays, and inlets of the Atlantic to the modern ship and barge lines of the inland rivers and lakes. Passing from the mule-driven barge

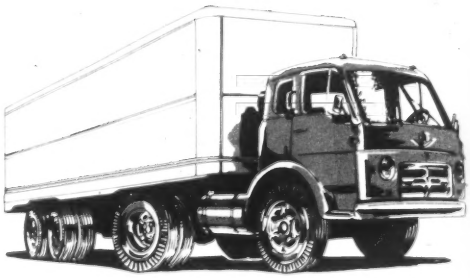
The dominant source of service and information on bona fide

TRUCKLEASING:



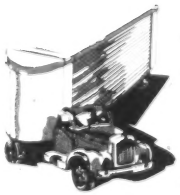
THE NATIONAL TRUCK LEASING SYSTEM,

a nationwide network of the oldest and most experienced companies in the truckleasing business. NTLS headquarters annually receives thousands of requests to explain the advantages of true all-service truckleasing — everything supplied but the driver—as contrasted with the many other variations of "leasing" contracts and services such as "finance," "driver-owner" deals, and "trip-leasing."



These inquiries come from traffic executives of major corporations, law-makers and regulatory bodies, certified public accountants, attorneys, and others who want to clarify current terminology and contractual arrangements covered by all-service truckleasing.

This authoritative position maintained by National Truck Leasing System in the industry is not only because the System constitutes a group of highly qualified service concerns located coast-to-coast, border-to-border, but also because it has no other single purpose than the impartial promotion and supplying of true, all-service truckleasing.



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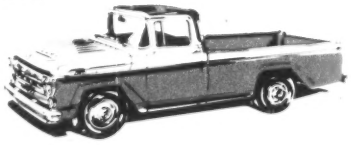

NTLS's true *all-service* truckleasing furnishes everything...*everything* but the driver. Your own trucking problem is different from that of any other firm. Before you lease your trucks, you may want to know answers to such questions as, "What is done with the trucks you now own?" "Is leasing more advantageous for a small fleet (even one truck) or a large fleet?" "Who washes the trucks?" "What kind of contract does an NTLS company give you which supplies insurance, licensing, constant maintenance, extra trucks for peak seasons or other reasons . . . in fact *everything* but the driver?" *All* these services and more, are provided in a single NTLS trucklease "package."

Other important advantages include the saving of your executive *time*, *worry*, and *headaches* in procuring and maintaining trucks in addition to operating *your* business . . . when you lease you are assured uninterrupted service . . . competent engineering of your trucks.

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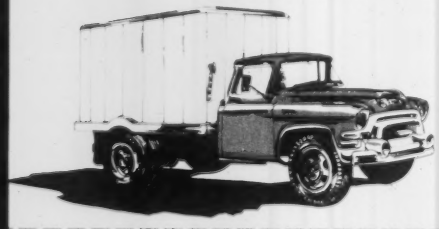

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to the iron horse was a brief transition as time is measured.

The railroads have made a mighty contribution to America's greatness, and the potential of growth is still there as steam power gives way to diesel. Nothing has so fired the imagination of youth as the whistle of the locomotive, and yet the most devoted friend of the railroad realizes that there have been blind spots in the vision of rail management. However, with technical improvements in rail operation, the development of freight terminals, the introduction of piggyback, railroads are back in sturdy competition for the long-haul freight for which their facilities are best suited.

Truck, Plane, Pipeline

The motor truck has demonstrated its functional advantages in using the nation's highways, providing an elastic, adaptable technique in door-to-door transport.

The airplane, with the vast acreage of air as a natural channel, has the one advantage of speed, and where fast delivery of cargo is paramount, has no competitor on land or water. What the future offers air transport is an indoor sport for the dreamer, but we have seen the cargo capacity of planes treble in a decade.

The pipeline is in a class by itself, and deserves consideration in a special category of transport devoted to liquids and gases, although there is no reason why grains, ore powders, and similar bulk items cannot be moved through pipes for long distances under the pressure of the pumps along the buried channels.

In considering the years ahead it is significant that carrier and shipper both recognize the need for coordinated effort that will make the best use of each carrier for the service of industry and the community.

Much has been accomplished by traffic executives in their studies of transport difficulties, but there is no obstacle larger than the barrier of ignorance that fogs the way to a better understanding of the function of traffic management, and its significance in the profit and loss statement. It is our purpose in this issue to present the transportation story in its importance to management, and to suggest remedies where they are necessary for the satisfaction and profit of both carriers and shippers.

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How to get your shipments out faster, at less cost

New 16-page booklet shows how easily it can be done through more systematic addressing of cartons, labels and tags

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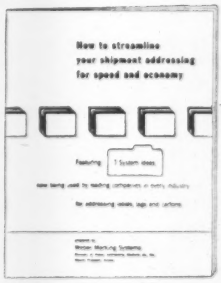
A vital operation

The stenciling and labeling of shipments is one of the most important operations in the plant because nothing gets shipped until it's been addressed. You can have the most carefully laid plans for getting your product from the production line to your customer, but if it isn't labeled, tagged or stenciled it never gets out of the plant.

Efficiency-wise companies are rapidly discovering that the key to a really efficient shipping operation is a system for addressing. This system should be fast, inexpensive, require a minimum of labor, and be tailored to your particular order-processing and material handling procedure.



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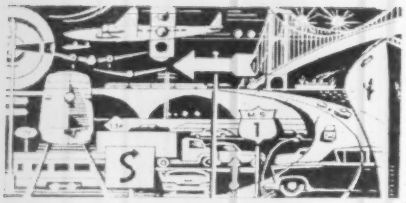

The articles in this Extra Emphasis Feature were prepared for publication under the direction of Marketing Editor Thomas Kenny of the **Dun's Review and Modern Industry** *staff*

HOW COMPANIES SPEND $50 BILLION TO MOVE GOODS

Who pays the cost of transportation? How much is spent? What are the future trends? Here are some answers from a DR&MI survey.

A SPOKESMAN for the U.S. Department of Commerce recently characterized transportation as the third largest cost of manufacturing, coming right after labor and materials. But, as one traffic manager says: "Many companies do not even know there is such a thing as traffic or transportation. They know they manufacture something and that it has to be delivered, and that's all." Too many small and middle businesses know neither what the actual costs of moving goods are nor how to control those costs.

In some industries, slipshod control of transportation costs can put companies out of business. And those that manage to survive despite poor controls usually suffer a heavy drain on profits. In most companies, the spending ratios (see page 69) for both inbound and outbound are higher now than five years ago.

When companies do get a tight rein on transportation costs, benefits multiply like cottontails. Says General Traffic Manager F. B. Martin of American Viscose: "On its outbound products, any company must know its transportation costs per item. We manufacture acetate and rayon yarn and staple, cellophane, and other wrapping materials. We know at the end of each month our freight expense per pound per item. In addition to keeping us informed of our transportation costs, this also directs our attention to those items where the relationship of packaging costs is out of line. It also lets us know whether our distribution pattern has changed, as to area, which we constantly check."

To help gain control of transportation costs, companies have turned increasingly in recent years to the use of company-operated trucks, both owned and leased. In addition, there is the advantage of improved service to customers, so necessary now when competition has a new edge.

Of the 325 surveyed manufacturers, 201 operate their own trucks. And about 40 others are now planning to do so in the near future.

About three out of four of the companies own their trucks while the remainder lease them. About 10 per cent both own and lease equipment. Some report that they try leasing first to test the actual economies of the projected operation.

How long, on the average, do manufacturers operate trucks before they are traded in? Here are the answers, in years, according to our survey:

	Median	Range
Food Industry	5	3–12
Textiles	7.5	4–10
Lumber	5	2–12
Furniture and Fixtures	4	2–7
Chemicals	5	3–10
Stone, Clay, Glass Products	5	3–10
Primary Metals	4	2–12
Fabricated Metals	4	2–10
Machinery (non-electrical)	4	1–12
Electrical Machinery	4	3–10
Transportation Equipment	5	3–7

As a general rule, the larger companies use their trucking equipment longer than do smaller companies.

In most of the surveyed companies, servicing of equipment is done within the company. This is particularly true of manufacturers of machinery or transportation equipment, which have both the facilities and the easy inclination to take on repair jobs.

We also asked the 201 companies that operate their own trucks for the average length of haul in miles:

	Median	Range
Food Industry	200	10–3,600
Lumber	200	25–1,000
Furniture and Fixtures	200	2–955
Chemicals	22	1–1,800
Stone, Clay, Glass Products	20	5–800
Primary Metals	100	10–500
Fabricated Metals	10	3–250
Machinery (non-electrical)	70	1–5,000
Electrical Machinery	65	2–700
Transportation Equipment	42	1–3,040

There is little relation between the size of a company and the length of haul. It depends more on the economies involved, the method of distribution, and the need to service customers quickly.

Who Pays for Transportation?

Traffic experts insist that companies should get control as much as possible of both inbound and outbound shipments. But if all companies adopted this objective, it would inevitably lead to an impasse. Your inbound is someone else's out-

WHAT SHOULD YOUR FREIGHT BILL BE?

Here's how much companies spend for transportation. Although the sample is sizable—more than 300 companies provided data—the figures should be considered as rough statistical guides, not as inflexible rules. Don't blame your traffic manager if your ratio is higher than the averages shown for your industry. Yours may well be a special case; for, as almost every company president insists, "Our company is somewhat different."

In any case, check the ratios for your company with the industry. That is, if you can. For in many companies, management control of transportation is a casual or haphazard procedure and accurate cost figures are seldom obtainable. In other companies, these ratios are watched closely as gages of traffic efficiency.

WHAT COMPANIES SPEND TO MOVE PRODUCTS AND MATERIALS

	SPENDING FOR INBOUND FREIGHT *As a per cent of cost of goods purchased*			SPENDING FOR OUTBOUND FREIGHT *As a per cent of sales*		
	No. of Cos.	Median	Range	No. of Cos.	Median	Range
Food and Kindred Products	(25)	7.0	0.5 to 40.0	(42)	6.0	1.2 to 30.0
Textile Mill Products	(8)	0.8	0.1 to 5.0	(6)	1.5	0.1 to 6.5
Apparel and Related Products	(7)	3.0	0.0008 to 7.9	(5)	2.5	1.0 to 10.1
Lumber and Products	(10)	7.5	0.1 to 37.1	(13)	6.0	0.006 to 32.0
Furniture and Fixtures	(12)	4.8	0.1 to 12.0	(11)	5.0	0.028 to 10.0
Pulp, Paper and Products	(8)	5.5	3.0 to 23.5	(9)	4.5	0.5 to 6.6
Chemicals and Products	(35)	4.8	0.01 to 29.0	(56)	5.0	0.01 to 19.0
Rubber Products				(6)	3.6	0.02 to 4.5
Stone, Clay, And Glass Products	(14)	12.2	2.0 to 312.27	(23)	4.4	0.1 to 50.0
Primary Metal Industries	(18)	4.0	0.1 to 19.8	(24)	2.8	0.1 to 19.5
Fabricated Metal Products	(24)	3.0	0.075 to 20.0	(29)	3.0	0.01 to 28.0
Machinery (except electrical)	(43)	3.2	0.017 to 80.0	(55)	2.5	0.012 to 39.0
Electrical Machinery	(19)	2.5	1.0 to 12.5	(25)	1.9	0.001 to 28.0
Transportation Equipment	(14)	1.8	0.002 to 6.0	(9)	0.4	0.0003 to 1.3
Miscellaneous Manufactures	(10)	2.8	0.1 to 8.0	(14)	4.8	1.0 to 12.0
SMALLER SAMPLES						
Printing and Publishing	(3)		0.5; 1.7; 9.0	(2)		2.0; 6.0
Petroleum and Coal Products	(2)		1.2; 20.0	(3)		2.0; 7.0; 9.0
Rubber Products	(4)		0.005; 1.0; 2.0; 2.0			
Leather and Leather Goods	(4)		2.0; 2.0; 3.1; 5.0	(4)		1.0;2.1;2.3;5.0
Instruments and Related Products	(3)		3.0; 3.0; 5.0	(3)		2.6; 3.0; 11.0

The median is the midpoint in a series of figures when they are listed according to their size. One-half of all the numbers in the series falls below the median and one-half falls above. Unlike the arithmetical average, it is not unduly affected by extreme figures at either end.

The ratios for outbound freight spending indicate wide spreads in some cases. But those at the extremes are special cases. Most company ratios cluster around the medians. One company, which makes fabricated metal products, is able to report a very enviable freight cost ratio of only 0.01 per cent because the items made – electronic assemblies – are both lightweight and small while the sales value is high. At the other extreme is the company reporting a ratio of 50 per cent (stone, clay, and glass products) because the value is low and the bulk is high. Transportation equipment makers chalk up very low ratios, for their products come equipped with their own wheels or wings.

Within the food industry, companies reported a spread from 1.2 to 30 per cent, the first from a maker of candy cake decorations and the latter from a wholesale bakery. Within the lumber line, the spread ranged from 0.0006 (pre-fab houses) to 32 per cent (green lumber).

The companies in the miscellaneous manufactures group are in these lines: brooms, brushes, hairpins, plastic toys and novelties, marking devices, and finally, caskets and burial vaults.

WHY INDUSTRY IS

3,000 applications... for a job that didn't exist

"But where is our labor coming from?" It was a natural question. The executive who asked it was used to industrial cities, and the town we had proposed for his new plant didn't appear to have many available workers.

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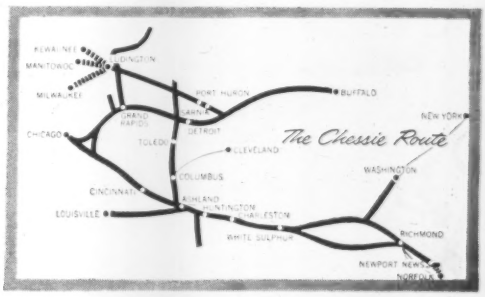

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bound and vice versa. Nevertheless, many companies are shying away from delivered prices and are considering the sales price at the supplier's plant plus the transportation costs they themselves incur as more meaningful.

What are the general trade practices about FOB terms in industry? We asked the 325 cooperating companies, "To what extent does your company pay the transportation costs on materials purchased?" Here are the answers, in percentages:

	Median	Range
Food Industry	60	1–100
Textiles	12	5–95
Apparel	95	1–100
Lumber	60	2–100
Furniture	90	40–100
Pulp, Paper Products	75	5–100
Chemicals	75	1–100
Stone, Clay, Glass Products	85	30–100
Primary Metals	87	1–100
Fabricated Metals	62	1–100
Machinery (non-electrical)	90	1–100
Electrical Machinery	75	3–98
Transportation Equipment	95	0.1–100
Misc. Manufactures	77	7–100

As a general rule, it is the smaller companies that request materials be priced FOB destination. Sometimes this is a way of sloughing off the entire transportation cost problem; in reality, they are purchasing a method of transportation over which they have no control.

Then the 325 companies were asked, "To what extent does your company pay transportation on products sold to customers?" Their answers, in percentages, were:

	Median	Range
Food Industry	100	1–100
Textiles	12	1–100
Lumber and Products	90	5–100
Furniture and Fixtures	42	5–95
Pulp, Paper Products	92	10–100
Chemicals	88	3–100
Rubber Products	90	4–100
Stone, Clay, Glass Products	86	0.1–100
Primary Metals	90	5–100
Fabricated Metals	80	1–100
Machinery (non-electrical)	35	1–100
Electrical Machinery	75	12–98
Transportation Equipment	5	0.5–98
Misc. Manufactures	90	5–100

There have been sizable shifts in the way shippers choose carriers during recent decades (see page 105). According to our survey, the most striking shift has been away from rail to over-the-road carriers, both commonly and privately owned. Despite this shift, railroads still account for the largest share of company spend-

ing for transportation. Here's how the surveyed companies break down their transportation dollar—on the average:

Common carrier trucks	39.3
Railroads	23.9
Company-operated trucks	15.2
Contract carrier trucks	10.4
Parcel post	5.3
Railway Express	2.8
Air freight	0.9
Coastwise shipping	0.5
Air Express	0.4
Air parcel post	0.4
Inland waterways shipping	0.3
Company-owned planes	0.04
Pipelines	0.01

While the big majority of manufacturers say they are getting good service from the common carriers, there is a sizable number of dissidents who insist that costs are too high and service too slow. The complaints are especially sharp against the rates for LTL or LCL shipments. But whatever their gripes, the main problem of the industrial shipper is to keep his own transportation cost so low (in relation to sales) that it does not block him from new and expanding markets. You'll find how companies are doing this on page 75.

In looking toward future markets, most of the surveyed companies expect that their demand for carriers' service will increase noticeably within the next five years. Their expectations about company transportation needs also reflect to some extent their plans for growth in sales volume. Here's how much the 325 surveyed companies expect their spending for transportation will increase in the next five years (figures are given in percentages):

	Median	Range
Food Industry	20	2–200
Apparel	15	10–30
Lumber	18	10–40
Furniture and Fixtures	50	10–200
Pulp, Paper Products	20	10–25
Chemicals and Products	25	5–100
Stone, Clay, Glass Products	20	2–100
Primary Metals	27	10–400
Fabricated Metals	20	2–150
Machinery (non-electrical)	25	5–350
Electrical Machinery	40	3–280
Transportation Equipment	12	3–50

Only six companies expect to spend less for transportation five years from now. The hefty rises that are widely projected by industry present a challenge to the carriers in the years ahead.

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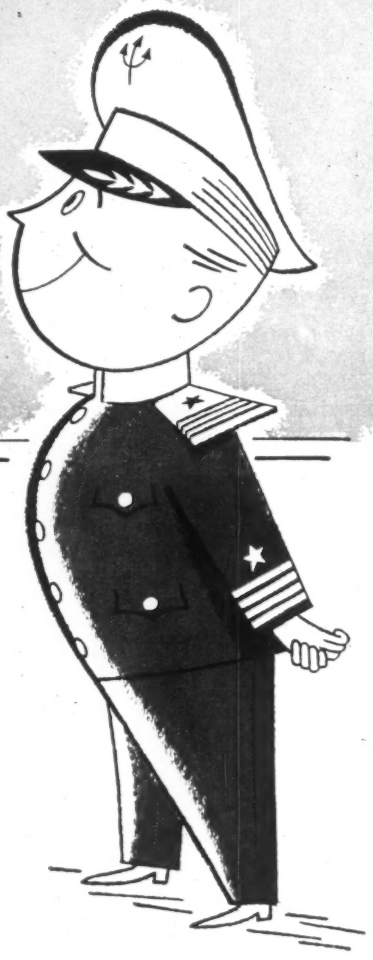

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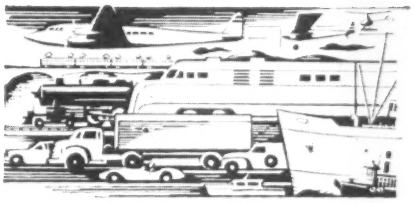


TRANSPORTATION COSTS CAN BE CUT

Here's a roundup of some methods companies are now using to save on shipping.

Also: Yardsticks to gage the efficiency of your own traffic operations.

ASKED, "Have you been able to reduce your transportation costs?" the president of a small manufacturing company replied, "Are you kidding?"

Most of the 325 companies surveyed by DR&MI report that there are more transportation dollars in the selling prices of their goods now than there were five years ago.

But a significant minority have been able to reduce their transportation costs. By thinking creatively about their traffic operation and its relation to the company as a whole, they have been able to come up with substantial savings.

Traffic managers are vocal in their insistence that they can handle their jobs creatively only if they can get the ear of top management. Too frequently, they say, their recommendations are pigeonholed at lower levels.

What Was Missing?

For example, one traffic manager had been recommending a change in the method of shipping for some time. He claimed it would result in substantial savings in the freight bill. But it involved the complete coordination of several departments—traffic, sales, production, warehousing, inventory control, packaging, and shipping, and a big boost in the spending for shipping and packaging.

As is frequently the case, the traffic manager reported to the superintendent of manufacturing, who was also responsible for shipping and packaging. And the superintendent was not impressed by projected savings in over-all operations that would mean an immediate boost in spending for two of his departments.

What was missing was coordination between company departments. The traffic manager needed management recognition so that he could sit with other department heads and discuss the question of over-all savings and the immediate effects on various departments.

When the proposed change was put into operation it brought a net savings of $280,000. This wasn't actually done until the company called in outside experts, Transportation Cost Analysts Inc., to study its transportation problems. They arrived at essentially the same conclusion as had the traffic manager who could not get through to top management. Because of the lack of coordination, he wasn't able to come up with the figures that would have brought action. After the study was completed, it turned out that the total annual savings in the freight bill came to $320,000—less the extra spending of $40,000 for packaging and shipping.

The change in the method of shipping that produced this substantial saving is worth considering, for a similar plan can pay off in many other industries. Here's how it worked: The company produces a household cabinet that is to be assembled by the consumer. To get the benefit of volume rates, the company had been shipping in carload lots to four warehouses, which supplied dealers throughout the nation. The tariff rate was the same whether the cabinets were sent assembled or knocked down.

The traffic manager dug into the rate structure and discovered that a saving of about 40 per cent could be achieved by sending the components of the product separately—the shelving in one shipment and the bolts and nuts in another. The saving was possible because the rates for components were lower than the rates for the complete article. The immediate boost in costs, the initial stumbling block, resulted from the necessity of packaging the parts at the warehouses rather than at the plant, where assembly-line operations made packaging cheaper.

Since this new shipping plan went into effect, the traffic manager's job has been significantly upgraded. He now reports to the executive vice president.

Lack of Liaison

It is frequently estimated that only one in five of all functioning traffic departments is properly coordinated with other company departments. (For a detailed discussion of the ways that the traffic department can be of service to other company departments, see the feature "Goldmine in Transit," March 1955, DR&MI.)

How do you measure the efficiency of your traffic department? When asked this question, the head of a middle-sized company manufactur-

(Advertisement)

"If Company Y employing 150 workers located a branch plant in Iowa,

Annual Savings would total $195,502"

...from the FANTUS area research study of IOWA

This Iowa "Industrial Resources" study shows how this and many other industries profit by locating a branch plant in Iowa. It shows you how they can save money through such factors as lowered in-bound and out-bound freight costs; wage differentials; proximity to consumer and industrial markets, raw material and parts supplies. It lists specific advantages in transportation, power facilities, quality of labor and other factors as they relate to these industrial types.

Among the industries with a unique "economic fit" in Iowa are: chemical processing, packaging materials, nondurables, metal working and machinery, electrical and electronic equipment. The possible savings listed by the study for these industries amount to many thousands of dollars a year.

The Fantus study of Iowa digs deep, it's objective, examines the factors which would be involved in an Iowa location.

This information will be made available to companies considering new plant locations now or in the future. For all the facts, contact the Iowa Development Commission.

IOWA DEVELOPMENT COMMISSION

370 Jewett Bldg. • Des Moines 9, Iowa

ing a consumer product replied simply: "We don't." And this company is not alone; many manufacturers don't even try.

Of course, most realize that something is awry in traffic when customer complaints about delivery delays begin to pile up. But most make no systematic attempt to apply performance standards as they do with other company departments.

Search for Yardsticks

Some scattered companies are developing yardsticks for traffic efficiency. And they report, as a result, tighter management control and economies in operation.

For example, the Convair Division of General Dynamics has set up these gages for its traffic department:

1. Freight cost per pound.
2. Adherence to budgetary allowances.
3. Maintenance of production schedules.
4. Cost savings for the year.

A major electrical equipment maker measures the efficiency of its traffic operation by the percentage of total tonnage that moves by low-cost carriers. At the Line Material Company, Milwaukee, Transportation Director Harold Reed uses these yardsticks:

Has the number of claims against carriers been reduced?

Has there been a reduction in the number of errors in freight bills discovered by freight auditors?

And some companies watch the ratio of the savings to the budget of the transportation department.

Transportation Vice President James Haley of Koppers Company, Pittsburgh, also gages his operation by the savings it produces. He says: "We have a departmental budget that runs about $350,000 a year. We have a widely publicized agreement with management that we will give them back at least $2 for every dollar they give me to run my shop. We have never failed to realize that. The savings we give to our customers are a bonus. That's a working rule. Never in the last eleven years have we failed to realize the saving."

Another company, RCA, has managed to save about $2 million a year on its transportation costs. It has been able to do this because the transportation department has complete control of all inbound and outbound shipments and also because of several specific improvements.

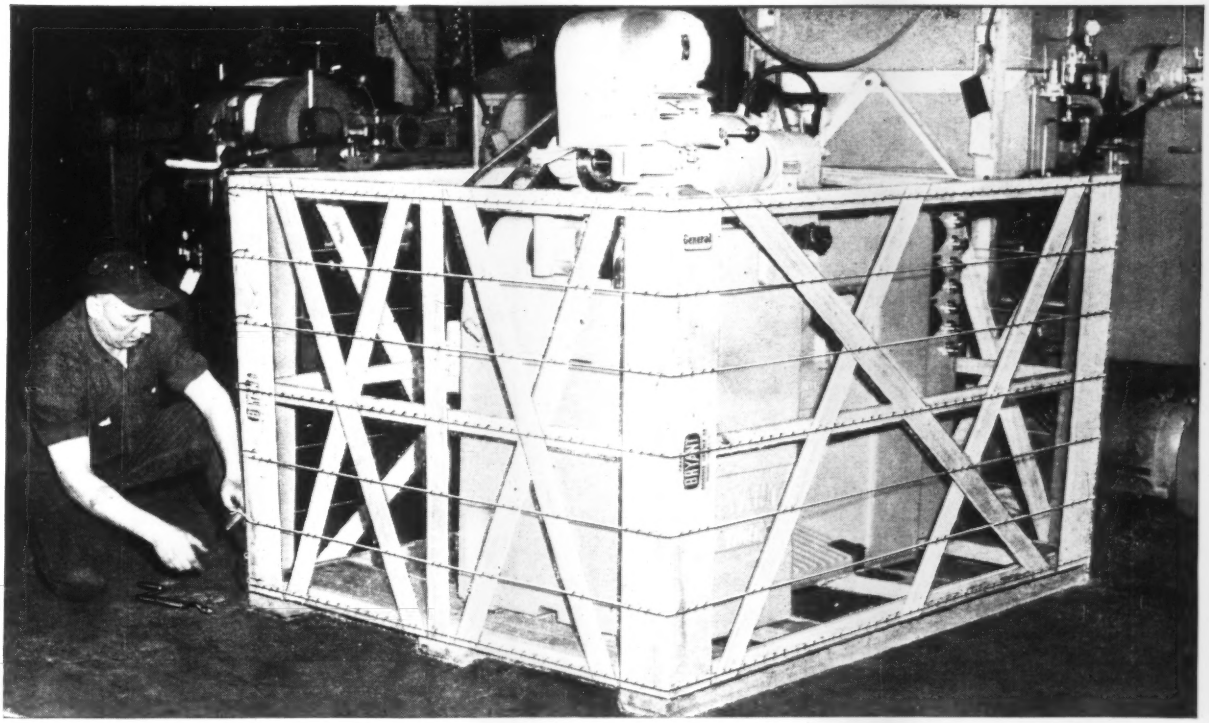
Run down the list below and see how many of these specific methods are now being used in your own traffic operations:

HIRE A TRAFFIC MANAGER:

If your company is spending $75,000 a year for moving goods, you should weigh carefully the advantages of establishing a traffic department with a full-time manager.

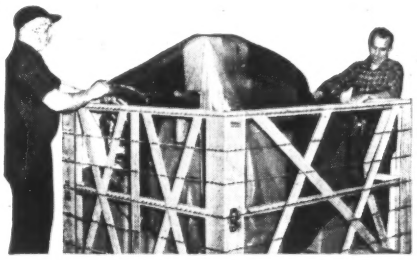
Many companies report they are setting up traffic departments for the first time. For example, a very large manufacturer of radio equipment and allied products called in a traffic survey expert, Thomas P. Scanlan, to

"He pays me 50 cents a week."



Packing starts with the machine in position on the sturdy hardwood skid base and secured with special steel clamps. The four resawn hardwood wirebound panels are quickly set in place and the corners firmly fastened by seven twist wire closures. Bottom panel cleats are then nailed into the deck boards.

General engineered wirebounds deliver 2-ton precision tools...cut packing costs 51%!



Packing is completed by slipping a huge polyethylene bag over the machine to keep out dust and dirt.

Savings where wirebounds were applied came to $8000, or 51%, in the first year of use. So reports Bryant Chucking Grinder Company, Springfield, Vermont, famous maker of precision internal grinders.

Savings came from reductions in labor, materials and time required to pack these huge machines and extra parts. No less important is the record of damage-free shipment established because there's an awesome amount of care and skill—and productive capacity—built into every machine shipped.

Can General Box do the same for you? We've a world of experience in wirebound design. We've two completely equipped design and testing laboratories. And it's mighty easy to find out. Just let us send a man. He'll get the facts that will get you the answer. A letter, a card or phone call from you will do it.

Factories: Cincinnati; Denville, N. J.; East St. Louis; Detroit; Kansas City; Louisville; Milwaukee; Sheboygan; Winchendon, Mass.; General Box Company of Mississippi, Meridian, Miss.; Continental Box Company, Inc., Houston.

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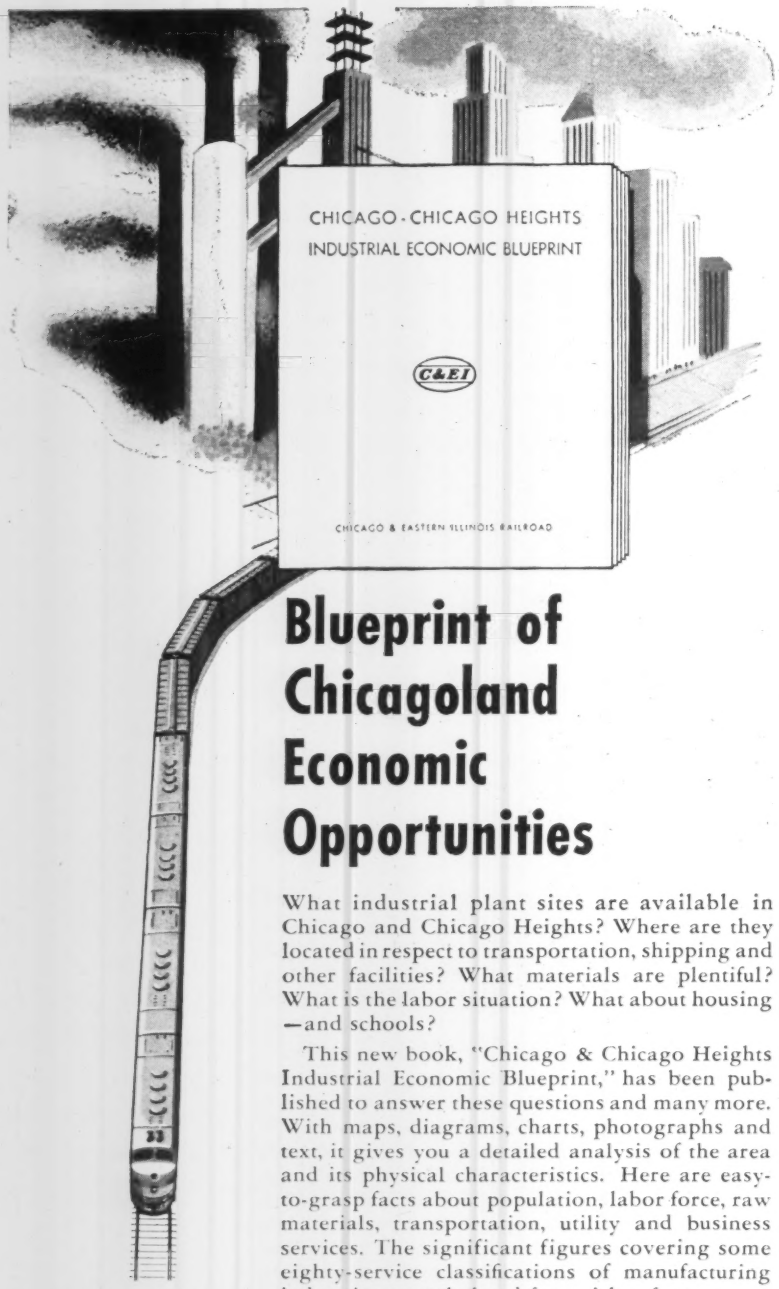

Blueprint of Chicagoland Economic Opportunities

What industrial plant sites are available in Chicago and Chicago Heights? Where are they located in respect to transportation, shipping and other facilities? What materials are plentiful? What is the labor situation? What about housing—and schools?

This new book, "Chicago & Chicago Heights Industrial Economic Blueprint," has been published to answer these questions and many more. With maps, diagrams, charts, photographs and text, it gives you a detailed analysis of the area and its physical characteristics. Here are easy-to-grasp facts about population, labor force, raw materials, transportation, utility and business services. The significant figures covering some eighty-service classifications of manufacturing industries are tabulated for quick reference.

"The amount of detail work that went into the preparation of these reports is truly amazing. In all the years in which we have been engaged in plant location work we have never seen so much data collected on a particular area."—from a letter describing previous economic studies by Chicago & Eastern Illinois Railroad.

Available without charge. For a complimentary copy of "Chicago & Chicago Heights Industrial Economic Blueprint," write Mr. H. B. Sampson, Vice-President, Chicago & Eastern Illinois Railroad, 332 South Michigan Avenue, Chicago 4, Illinois.

C&EI

Chicago & Eastern Illinois Railroad

study the record of shipments for possible savings. After he pointed out obvious errors in choice of carriers, which were costing the company $20,000 a year, the decision to hire a full-time traffic manager was quickly made. Since then the company has kept a detailed record of the savings achieved by the new department. They have now reached $300,000 a year.

Companies too small to have full-time traffic managers frequently make use of traffic consultants. They provide information on rates and routing, audit the freight bills, prepare claims, and do other work normally done by the traffic manager. Small companies can also get help on their transportation problems from local Chambers of Commerce and trade associations.

Research your methods of transportation:

Most companies have neither the time nor the money to analyze their traffic operations scientifically. If the traffic department is well organized, the traffic manager may be able to take a short breather away from ICC hearings, rate negotiations, and the other minutiae of the job and take a long look at his operations to see if they can be improved.

One company that has approached the problem of improving company transportation by the task-force method is Koppers. For within its 50-man traffic and transportation department, Koppers has set up a four-man transportation research and development section. Mathematically oriented, this team of specialists surveys the company transportation activities in the broadest sense and comes up with current and long-range plans as well as solutions to pressing problems. It necessarily gets into areas that are related to the movement of traffic as well—plant and warehouse location, materials handling, and even packaging.

The specialists work on research projects with operating divisions throughout the company to bring about over-all savings in transportation. They sit down with people from sales and purchasing to determine the most desirable quantities to be shipped while still maintaining service to customers and sufficient supplies to the plants. The section serves as an information center on transportation—both company transportation and the latest developments in the

field as a whole. And it weighs carefully the applications of newer management techniques—operations research, electronic data processing, linear programming, statistical analysis—to company transportation.

Although the new research and development section has been in existence only about one year, it has already come up with pleasing results for top management. For example, a close study of how a market was supplied from two plants revealed that Koppers could save $100,000 a year in transportation by adjusting production between the two plants. The researchers focused their attention on types of carriers, quantities and frequencies of shipments, warehousing, and even the systems and equipment used in moving the material.

As the result of another research study, Koppers saved itself $30,000 in unnecessary spending when the R&D section turned down a proposal for installing electrical accounting equipment in traffic. The less expensive manual methods are still satisfactory—for the present, at least.

The R&D people have also worked on designs for special containers to move materials over the road and rails. And they translate the arguments for leasing versus purchasing transportation equipment into hard mathematical facts. The section has conducted a detailed census of transportation equipment, facilities, personnel, and services throughout the company's 70 plants and warehouses. The information is published (within the company), kept current, and serves as a distinct aid to company-wide coordination.

But perhaps the most striking advantage of the new R&D section is none of these. William C. Brittain, the manager of the R&D section, says that "one of the most significant developments has been the effect on other transportation department personnel and on persons in other divisions and departments. Within the department there has been a marked effect in that other sections are digging deeper into possibilities for improvements in their own daily work. Outside of the transportation department there has been an expansion of feeling among individuals that the R&D department is desirous and ready to study and assist in the solution of any significant problem that involves transportation in any way."

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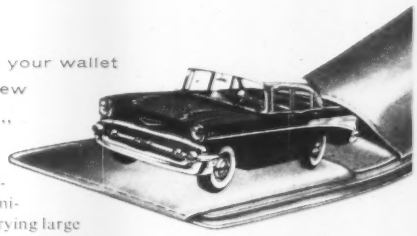

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about industrial opportunities in Long Beach, California

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Here, for your consideration, is industrial Long Beach —and its opportunities for your industry. This is no rosy promotion piece — but honest facts on the twelve distinct industrial advantages of this beautiful, thriving city.

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LONG BEACH, CALIFORNIA

OPERATE YOUR OWN EQUIPMENT:

When coordination of traffic with other departments is achieved, it pays off. The traffic department in one large company produces operating savings that are about seven times larger than the department's operating budget—savings of about $1 million each year. More than half of this can be traced to the traffic manager's ability to gain complete cooperation from other company departments—planning, sales, production, purchasing, and others.

The most impressive saving scored by this transportation executive has been brought about by the use of company-owned and -operated equipment. Tractors and trailers are used to move products from plants in New Jersey, Virginia, and the Carolinas to customers in the Middle Atlantic and New England States.

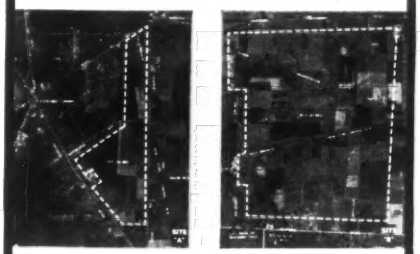
On the back-haul, the trucks bring materials and supplies purchased FOB suppliers' factories. Thus the company controls the routing of the material it purchases.

The company estimates that it saves about $400,000 each year, after amortizing the equipment on a three-year basis, against the rates quoted by the lowest common carrier.

Besides, the company estimates that another $100,000 is saved each year because the portion of traffic that of necessity moves by common carrier goes at rates shaved because of the private truck competition.

To achieve such impressive savings a company must make every effort to bring about the full utilization of the equipment. Here's how this company coordinates the traffic function with other company departments to save a half-million each year: The planning department, which schedules production with sales, sends a copy of the shipping schedule for each period to the general traffic manager. He arranges to have the required number of trucks ready at each plant just when they are needed. The company's products move from the plants without delay and damage in transit is under tight control.

A copy of each plant purchase order is sent to each local plant traffic manager. He selects the orders for materials and supplies that are to be shipped FOB the suppliers' plants in the Middle Atlantic and New England States. This information is passed along to the company's central traffic department, which screens



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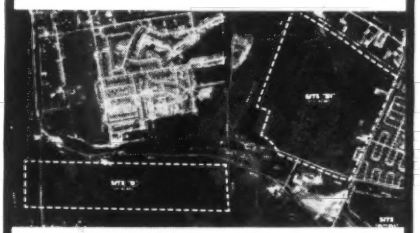
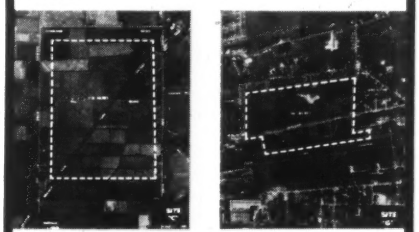
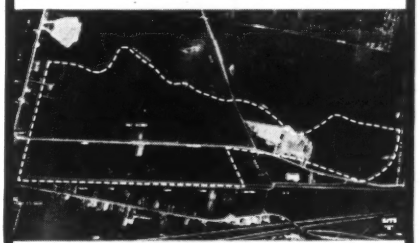
Ⓑ SANBORN (Town of Wheatfield), N. Y.



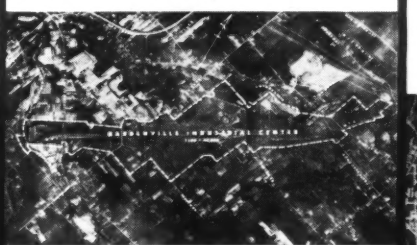
Ⓓ Ⓓ-1 TONAWANDA, N. Y.



Ⓒ BEACH RIDGE, N. Y. Ⓖ DEPEW, N. Y.



Ⓔ CHEEKTOWAGA, N. Y.



Ⓕ GARDENVILLE, N. Y.

Ⓗ LANCASTER, N. Y.

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in the Buffalo-Niagara area of the St. Lawrence Seaway offer new opportunities

With the development of the St. Lawrence Seaway, the Buffalo-Niagara area offers unusual opportunities for access to the world's raw materials and to world markets. An abundance of low-cost electric power is available for diversified industrial growth.

Eight typical industrial locations are described and illustrated in our new brochure "Greater Buffalo-Niagara Industrial Sites."

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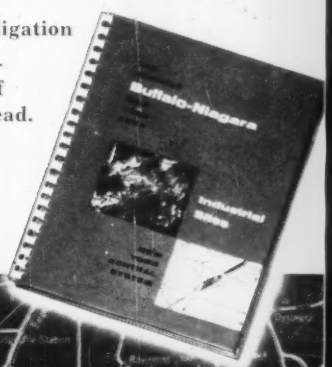

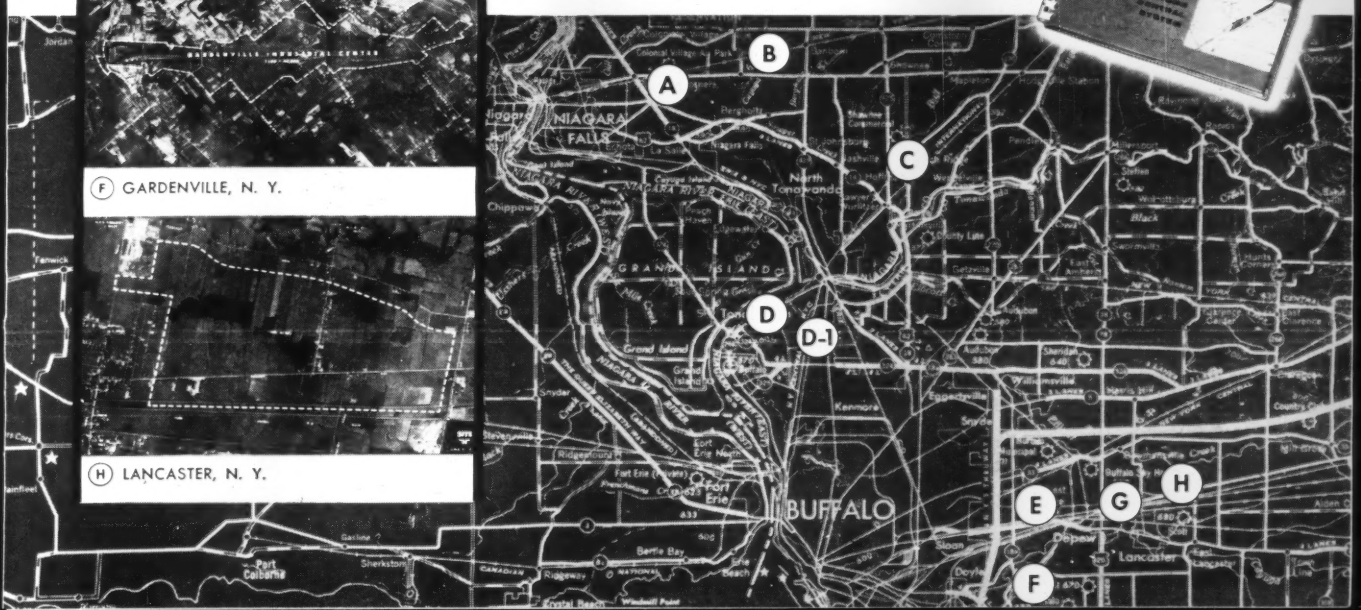

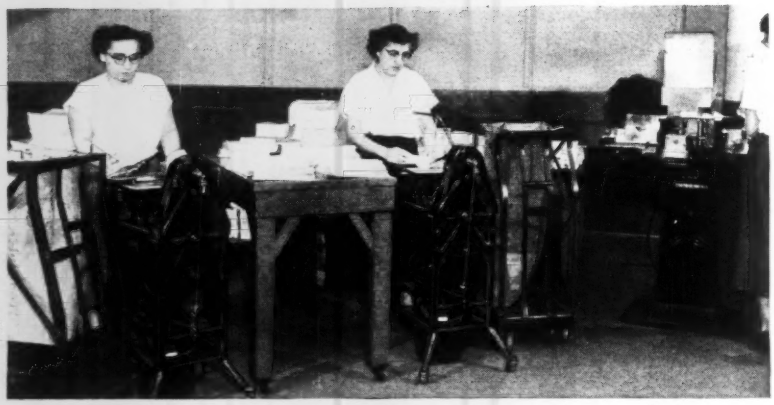

TIES 10 times faster for Butler Bros.

"We tie out as many as 100,000 pieces of mail a day on our Bunn Tying Machines . . . and do it 10 times faster than by hand-tying." This is the report of Miss K. Bryant, Service Department Supervisor of Butler Brothers, one of the world's large distributors of general merchandise.

Operators simply place a stack of envelopes on the Bunn Machine and step on a treadle . . . in only 1½ seconds it is neatly and securely tied, with a non-slip, pilfer-proof knot.

Dozens of different-type mailings go out each day, all at the same high speed—with no time lost for machine change-overs. Bunn Package Tying Machines adjust automatically to any size or shape. Whatever the size, every stack of mail is tied with just the right amount of twine and with uniform tightness.

Bunn Machines pay for themselves many times over, in many ways. Fatigue-less operation increases employee efficiency and production . . . anyone can operate without training . . . easily moved to break bottlenecks in any work area.

Tying mail is only one of hundreds of Bunn Machine applications. Thousands of companies of every type, large and small, use Bunn Tying Machines to tie such varied products as bakery goods, paper boxes, cans, meats, and many others. In fact, almost anything which can be tied by hand can be tied faster, better and more economically with a Bunn Package Tying Machine.

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the data and informs the supplier that the material will be picked up by the buyer's truck.

After the data are coordinated by the central traffic department, the instructions are sent to the company-operated truck terminal. As a result of this careful planning, every time a driver leaves a plant with a load of products for a customer, he has specific instructions to make certain stops on the back-haul.

Also, since the cost of transportation is computed in the selling price of purchased materials delivered FOB to the plant, companies are becoming increasingly aware of the need for gaining control of the routing of inbound materials. Your competitors may already be moving to cut selling cost in this way.

REDUCE THE SPENDING FOR PREMIUM TRANSPORTATION TO A MINIMUM:

Companies are getting results by keeping careful records of the monthly spending for high-cost transportation used to meet emergencies. Some use of fast-delivery high-cost transportation is always inevitable, but when it begins to account for a sizable share of all freight bills, it points to a breakdown of coordination in the company, and possible trouble in departments other than traffic.

Of course, some companies are using air carriers for much of their freight. But these are special situations in which the high value of the articles is able to bear the cost while air movement offers other savings in warehousing, inventory, insurance and the like. At most, there are only a few hundred companies using air for routine shipments. Among the products so shipped are drugs, electronic parts, lingerie, scientific equipment and even wallpaper.

Companies are seeking solutions for soaring transportation costs by many other methods, from rate negotiation to operations research (see page 93). But whatever the method, they realize that the alternative is to restrict the company's effective marketing area. Several of the more than 300 surveyed companies have already been forced, because of their inability to control transportation costs, to pull back into local markets like tortoises into their shells. But like the tortoise, they will be seriously handicapped as the competitive pace quickens in the years ahead.

No more idle trucks! (*His boss has The Hertz Idea*)

It's true! You can help yourself to the most dependable delivery service when you *lease* trucks from Hertz!

You only pay for trucks you need, thus, waste of idle trucks is ended. And when an extra truck is needed, it is provided by Hertz immediately. Overhead goes down and new tax advantages result.

Hertz long-term truck leasing service affords all the advantages of private ownership without the worries. It provides complete release of capital investment. Hertz pays full cash value for your present trucks and replaces them, when necessary, with modern GMC or other sturdy, dependable trucks.

What's more, Hertz furnishes trucks engineered for the job, properly insured, expertly maintained, painted and lettered to your specifications, washed, greased, gassed, oiled, garaged—in fact, Hertz furnishes everything but the driver! Why not investigate Hertz truck leasing service today? A free Hertz survey of your truck needs is available on request. Just call us. We're listed under "Hertz" in *alphabetical* phone books everywhere! Hertz Truck Lease Service, 218 South Wabash Avenue, Chicago 4, Illinois.

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—but we're sure proud of the "bite" taken by these massive jaws. This rugged Industrial Brownhoist bucket can pick up a mouthful of 20 tons of ore at a time.

Big bites, rapid bites, accurate bites — this combination means fewer man-hours, reduced expenses, larger profits.

Your material handling problem may call for locomotive cranes, coal or ore bridges, unloaders, standard or special buckets, or other equipment. In each case you can depend on Industrial Brownhoist for an economical solution.

Our nearest representative knows how to help you. Or write direct to Bay City, Michigan.

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AGENCIES: Detroit, Birmingham, Houston

BROWNHOIST

CAREFULLY CLASSIFY YOUR COMMODITIES FOR COMMON CARRIERS:

Shippers probably lose more money through improper classification than through any other single error. Small companies without operating traffic departments are particularly prone to this practice.

The files of the Eastern Traffic Bureau, which advises companies on proper classification and other traffic matters, are crammed with cases of costly classification mistakes. For example, a hardware supplier was overpaying his freight rate by about 60 per cent. Shipments of brass-covered steel rods moving to retailers who cut them to desired lengths were assessed by the carrier as "curtain rods." The shipments should have been rated at the much lower level which applied to "iron or steel, brass-coated rods."

SEEK BETTER ROUTING:

Most companies seldom take a second look at the route by which goods get from one spot to another. However, when they do, they frequently turn up fresh sources of savings. For instance, Traffic Manager Harry Suiter of the Merck Company of Rahway, N.J., has just completed a study of the routing by which drugs move from the New Jersey plant to markets in the Midwest. Shipments have been going by carload to the St. Louis branch, and from there less-than-truckload lots are sent to such areas as Ohio, Eastern Michigan, Knoxville, Tenn. The new study shows that by shipping directly to these and other points in less-than-truckload lots, the company can rack up savings of $30,000 a year.

JOIN A SHIPPERS' ASSOCIATION:

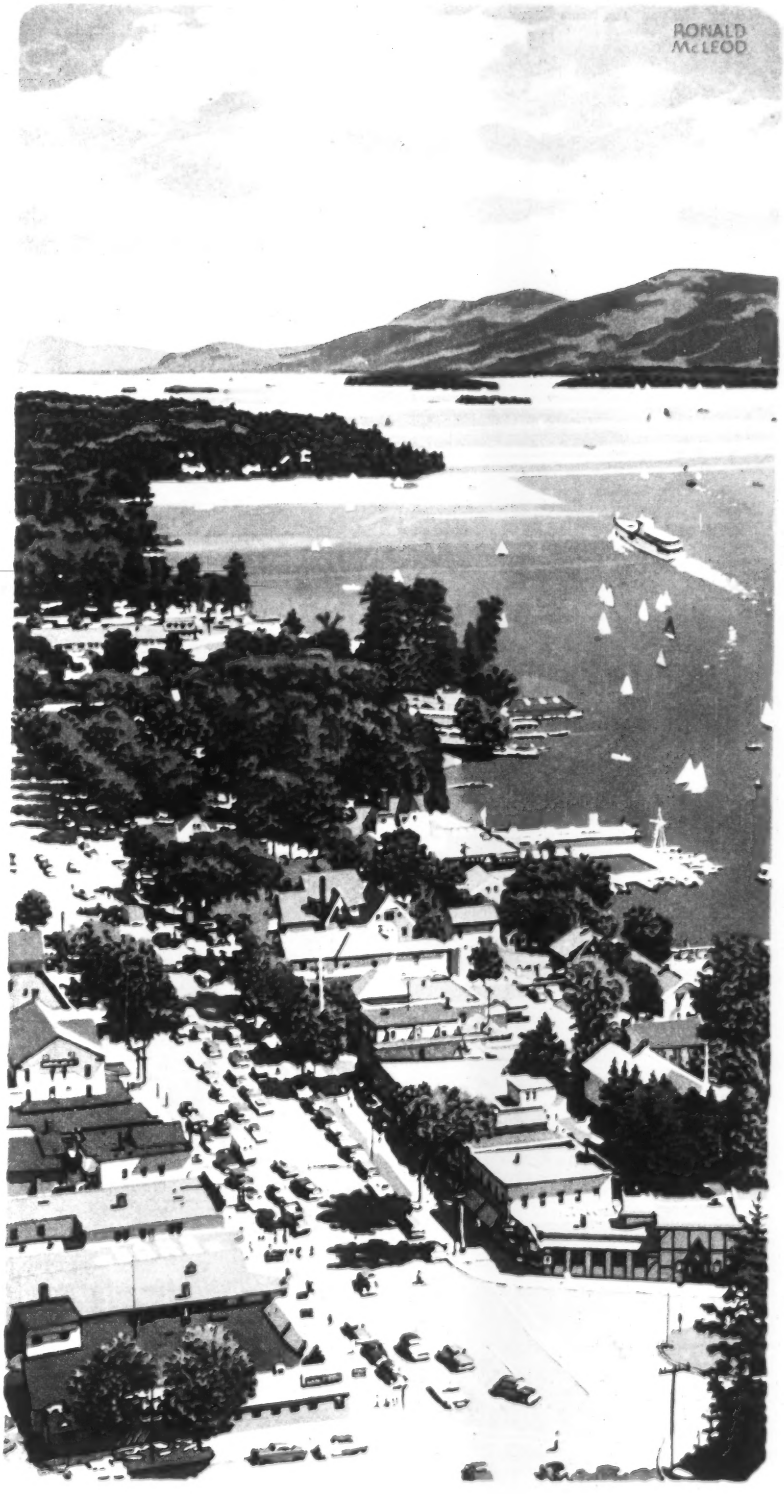
Many companies are turning to this method to hold the line on rising freight costs. Lockheed Aviation expects to save $26,000 in 1957 by this method alone.

Here's how such a set-up works: Two or more companies get together to perform for themselves the services that commercial freight forwarders provide. In other words, the cooperating companies pool their shipments to take advantage of lower rates for volume shipments.

This is sometimes accomplished by companies jointly operating a fleet of trucks to prevent the deadheading on backhauls, which commonly prevents individual companies from taking on their own equipment.

continued on page 87

"UPSTATE, N.Y."



BEAUTIFUL LAKE GEORGE, cradled by the Adirondacks, is one of the most picturesque vacationlands in America . . . another example of why "Upstate, N.Y." is such a fine place to live and raise a family. Vacationland is right in your backyard anywhere in "Upstate, N.Y." . . . one more reason why more and more business is expanding and moving to this thriving area between the Hudson River and the Niagara Frontier.

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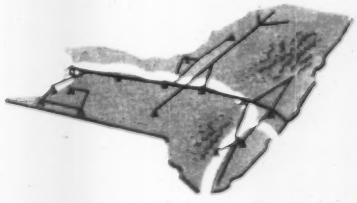
For more about "Upstate, N.Y.", write Earle J. Machold, President, Niagara Mohawk Power Corporation, Syracuse, New York.



The Lake George area offers a complete choice of summer and winter sports—boating, fishing, bathing, hunting, skiing—and it's only a short distance from the N.Y. State Thruway.

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Consolidate Your Shipments:

Companies are increasingly aware of the cost benefits in shipping in carload and truckload lots. The advantages seem obvious, but many companies send too large a share of their shipments in small lots in response to the hurried demands of customers, dealers, and distributors. The best approach to consolidating your shipments is by measuring the effects on these groups of holding back shipments for several days.

Perhaps the extra costs of extra shipments for small inventories at points of destinations will be more than offset by gains from volume shipping.

Shipping in consolidated lots is frequently bound up with the decision whether or not to warehouse. The Trane Company of La Crosse, Wisc., manufacturers of air conditioning and other equipment, recently added five new regional warehouses to the two already used. This will not only reduce freight rates but enable the company to provide faster service to customers. The reductions from better freight rates are being passed along to customers, for the company is in a tight market.

Smaller companies, not able to put their own warehouses into the field, frequently use public warehouses. The costs of public warehousing plus the subsequent LCL or LTL charges are often less than the savings brought about by consolidating shipments from the plant. Public warehouses offer many services other than storage.

But, there is no rigid rule that carload volume shipping plus warehousing will be cheaper than quick direct shipping by LCL or LTL. In every case, it depends on the peculiar problems and circumstances of the company involved.

Audit Freight Bills Closely:

Check your freight bills for proper weight, rate, and classification descriptions. If you don't have rate clerks, you may want to use an outside traffic bureau. Such a bureau usually splits any amounts reclaimed from carriers 50-50 with the shipper. However, you should be careful in hiring one audit bureau to do two jobs: to advise on routing and ratings and to handle your claims with the carriers. For the temptation to misroute so as to place claims later may be too great for some marginal operators.

man putting down a sound investment

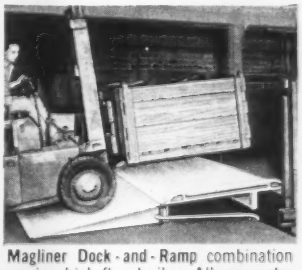
. . . ONE THAT WILL SPEED LOADING AND KEEP COSTS DOWN

This company has made a wise investment—one which will pay dividends over a long period of time! The man above is putting a Magliner magnesium dock board in place on the company's dock. This new Magliner will speed loading . . . get more out of power trucks and other loading equipment . . . keep costs down. Made of light, strong magnesium, the dock board is easily moved and positioned by one man. No heavy lifting . . . no risk of physical injury, it will protect men, loads and equipment against accidents and costly damage.

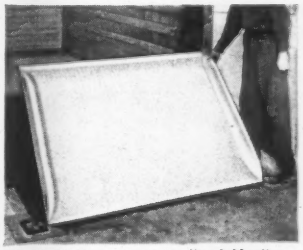
Magliner magnesium dock boards are designed to meet both ordinary and out-of-the-ordinary loading conditions . . . eliminate costly delays and bottlenecks . . . make loading costs go down! Engineered and built *to take it*, they safely handle loads up to 20,000 lbs.

Magliner dock boards will pay other big dividends, too. They are low in initial cost and because they provide dependable, long-life service with less maintenance, they give you greater economy ALL-ways.

Find out today, how Magliner magnesium dock boards can cut loading costs in your operation. Write for Bulletin DB-204.



Magliner Dock-and-Ramp combination services high-floor trailers. Allows greater rise . . . longer slope . . . safer loading. Dock board may be used independently.



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*Patent Pending

SEND YOUR NAME AND ADDRESS FOR A COPY OF BULLETIN DB-204, TO MAGLINE INC., P. O. BOX 16, PINCONNING, MICHIGAN.

This is to certify that
Arthur D Johnson
having successfully passed the Examinations of the
AMERICAN SOCIETY OF TRAFFIC AND TRANSPORTATION, INC.
prescribed by the Society through its Board of Examiners is awarded this
CERTIFICATE OF MEMBERSHIP
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Issued by authority of the Society
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to do important jobs well!

• The American Society of Traffic and Transportation "encourages the attainment of high standards of technical training requisite to the proper performance of the functions of transportation."

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• The Burlington congratulates the Certificated Members of the A. S. of T. T. It looks forward to even broader recognition of Society membership as a major professional achievement.

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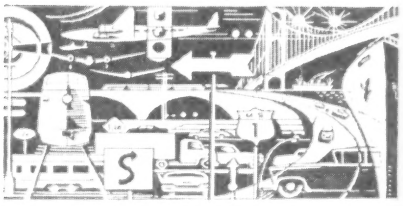

WHERE DOES THE TRAFFIC DEPARTMENT FIT?

To find out, DR&MI surveyed 325 companies. Their answers may surprise you, and give you a yardstick to judge your operations.

TOO FREQUENTLY responsibility for traffic operations is passed around like a poor relation. In one small manufacturing company, the president rated this operation so high that he handled it personally. But when he passed on to his reward, responsibility for traffic was not picked up by his successor. Instead, it was made the responsibility of—yes, you guessed it—"one of the girls in the office."

This instance, while not typical of most companies, does point up the uncertainty that still exists in top management about the importance of transportation. In too many companies, top management has either made the traffic manager responsible to middle management or, worse yet, relegated the function to a shipping clerk who makes no attempt to see beyond the grindstone at the end of his nose.

As a consequence, traffic manage-

HOW LARGE ARE COMPANY TRAFFIC DEPARTMENTS?

Of the 325 companies which took part in the DR&MI survey on company transportation, 154 reported that they had full-time traffic departments. The table below shows the number of full-time employees who staff these departments. Sharp variations exist because in some companies the traffic functions may be widely decentralized, while in others large headquarters staffs keep tight rein on traffic for all company plants.

	NUMBER IN TRAFFIC DEPARTMENT IN 154 COMPANIES						
Sales volume:	Under $1 Million	$1–$5 Million	$5–$10 Million	$10–$25 Million	$25–$50 Million	$50–$100 Million	Over $100 Million
Food and Kindred Products	1	1; 2; 5	2; 3; 55	6; 60	5; 5	3; 22	12; 14; 15; 18; 25; 40; 59; 65; 85; 200
Textile Mill Products		2; 4			37		5; 7
Apparel and Related Products	2						
Lumber and Products		3	15			5; 8; 8	
Furniture and Fixtures	2	1		3			
Pulp, Paper, and Products				2		10	4; 29
Printing and Publishing				2			
Chemicals and Products		2; 20		2	3; 10	12;12;12; 23	10; 12; 21; 24; 49; 75; 78; 148
Petroleum and Coal Products						10	25
Rubber Products							20; 58; 60
Leather and Leather Goods	1						10
Stone, Clay, and Glass Products	1; 6	1; 3	2		2	4; 7; 10	27; 31
Primary Metal Industries	2	4	5			5; 9; 22	13; 23; 42; 80
Fabricated Metal Products	1; 2	1; 3; 12		3; 4; 5		21	7
Machinery (except electrical)		2; 6	1; 1; 1; 2; 4; 5; 11; 12	11	3; 70	3; 5; 20	3; 3; 7; 7; 8; 10; 12; 12;-21; 57; 104
Electrical Machinery		3; 3				12; 12;-12; 17	2; 3; 8; 12; 14; 26; 192
Transportation Equipment		7		1	106	3; 43	5; 6; 8; 8; 24; 31
Instruments and Related Products							3; 29; 45
Miscellaneous Manufactures	1; 1					28	
Median	**1**	**3**	**3.5**	**3**	**5**	**11**	**20**

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ment had been a dead end for executive advancement. One traffic manager recently said, "The chairman of the board and I have one thing in common: We've both gone as far as we can in the company."

Happily, however, there has been a breakthrough for traffic management, particularly during the past five or six years. More and more, traffic managers are becoming vice presidents in charge of transportation or distribution (see "Goldmine in Transit," DR&MI, March 1955, for specific examples). But our new survey of 325 companies shows that in less than 3 per cent of industry does the man in charge of company transportation bear the title of vice president.

Whatever they are called, traffic managers can exist only where top management is convinced of a need for them. Strangely enough, despite the proof of the ways better transportation can pay off, even some of the largest companies still don't have traffic managers. Here's how more than 300 companies answered the question, "Does your company have a full-time manager of traffic?"

Size by sales	Yes	No
Under $1 million	11	74
$1 million–$5 million	20	70
$5 million–$10 million	14	18
$10 million–$25 million	11	1
$25 million–$50 million	9	3
$50 million–$100 million	28	2
$100 million and over	61	3
Totals	154	171

Among the smaller companies, those with sales of less than $1 million, several of the concerns with traffic managers are in the stone, clay, and glass products industry, where transportation costs bulk large as an operating expense. As you would expect, unless transportation costs run high enough—say 5 per cent—to be noticeable in the executive suite, the traffic manager will probably never get close enough to the top manager to offer his contributions to company progress.

Unless the traffic manager reports to an executive who can both balance and blend the contending claims of various company departments (which in many companies are in reality more in competition with one another than with other companies), he can offer little. For his functions and responsibilities cut across and affect purchasing, sales,

production, warehousing, materials handling, and many other parts of the company. But, as our survey shows, traffic managers are frequently relegated to the nether regions of the organization chart. Here is a breakdown of the people to whom, according to our survey, traffic managers report:

President	21
Vice President	50
Purchasing Agent	8
Plant Manager	12
Production Manager or Foreman	7
Sales Manager	6
Comptroller or Assistant	8
Treasurer	5
General Manager	17
Others*	20

* Including such varied executives as office managers, directors of distribution or marketing, and executive secretaries.

In a mere sprinkling of companies, most of which are very large, the traffic managers report to top management officials. And it is in these same companies that some of the most satisfying savings in transportation costs are being achieved (see page 75).

Of the 21 traffic managers who report to their presidents, the overwhelming majority are in big business. Only one was in middle business ($1 million to $10 million sales), where rapid growth puts strain on the coordination essential for healthy expansion. Another dozen report to executive vice presidents, but here again large companies predominate.

Those fortunate enough to report to a vice president generally are responsible to VP's in charge of only one department — manufacturing, sales, finance, purchasing. One traffic manager reports to the VP for public relations; in another company the TM's boss is the head of personnel.

And there is also a direct correlation between the closeness of the TM to top management and his paycheck. For when he can demonstrate sizable savings to the brass, some of the money is bound to rub off on him. This table shows how the 154 traffic managers in our survey are compensated for their labors.

Size by sales (in millions)	Median	Range
Under $1	$ 4,500	$3,600– 6,000
$1 to $5	6,000	4,430– 8,500
$5 to $10	6,230	5,000– 9,000
$10 to $25	6,000	5,880– 9,000
$25 to $50	8,630	7,140–20,000
$50 to $100	11,000	6,600–22,000
$100 and over	13,500	8,500–35,000

NEWS

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See next month's issue for further details— or better still, write us today for catalog.

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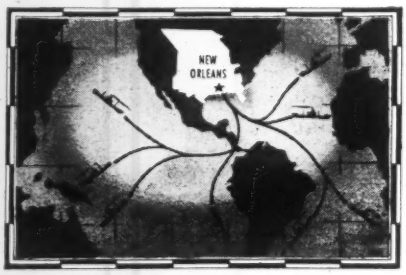


Among industries, chemicals were high, with a median salary of $14,500 and a range of $7,200–$23,000. At the other end of the scale were machinery manufacturers with a median salary for traffic managers of $6,700 and a range of $5,000–$11,000.

In most companies, the traffic manager is the missing man at the conference table. The majority of the nation's 300,000 manufacturers are too small to set up functioning traffic departments. And, unfortunately, many small manufacturers do not peg this responsibility at the executive level. Instead, it is allowed to trickle down to a shipping clerk or lower. This table shows who is responsible for transportation in 171 companies that do not have traffic managers:

Purchasing Agent	21
Shipping Clerk	19
Sales Manager	18
Shipping Manager	14
Plant Manager	11
Office Manager	11
Traffic Consultant	9
General Manager	8
Others*	60

* Including, in small and middle business, such people as the company president (4), vice president (3), secretary-treasurer (5), production manager (3), and controller, inventory clerks, bookkeepers, "one of the warehouse men," and even "one of the girls in the office."

Here's how their functions (outside of normal traffic duties) break down for the 154 full-time traffic managers who cooperated in this study:

- There are 98 responsible for warehousing as well as traffic. Most of these are in either large or small companies. In middle business, warehouse managers operate on their own.
- There are 89 traffic managers responsible for packing the goods they move. Here again, most are in the larger and smaller companies. In the smaller companies, it is a matter of necessity, while in some larger companies the benefits of centralized authority have become obvious.
- A smaller number of traffic managers, 64, were also responsible for the choice of materials handling equipment.
- And 98 of the traffic managers also handle the operation of company truck fleets.

Whatever their duties today, the job of traffic manager is sure to

change considerably in the next decade. Already companies are putting out feelers toward the future as they examine the usefulness of electronic data processing and operations research for their traffic. Company transportation is probably the one function that involves more variables than any other—the choice of carriers, particular routes, commodity rates, inventory levels, warehousing, and many others.

Consequently, traffic managers are avidly interested in these new methodologies that promise to resolve all these and other variables, which are now frequently left to seat-of-the-pants traffic management. About one-sixth of the 325 surveyed companies are now using or planning to use electronic data processing for their traffic operations. Most of these companies are in the $100 million sales (or over) class, but, surprisingly, there were several small companies represented.

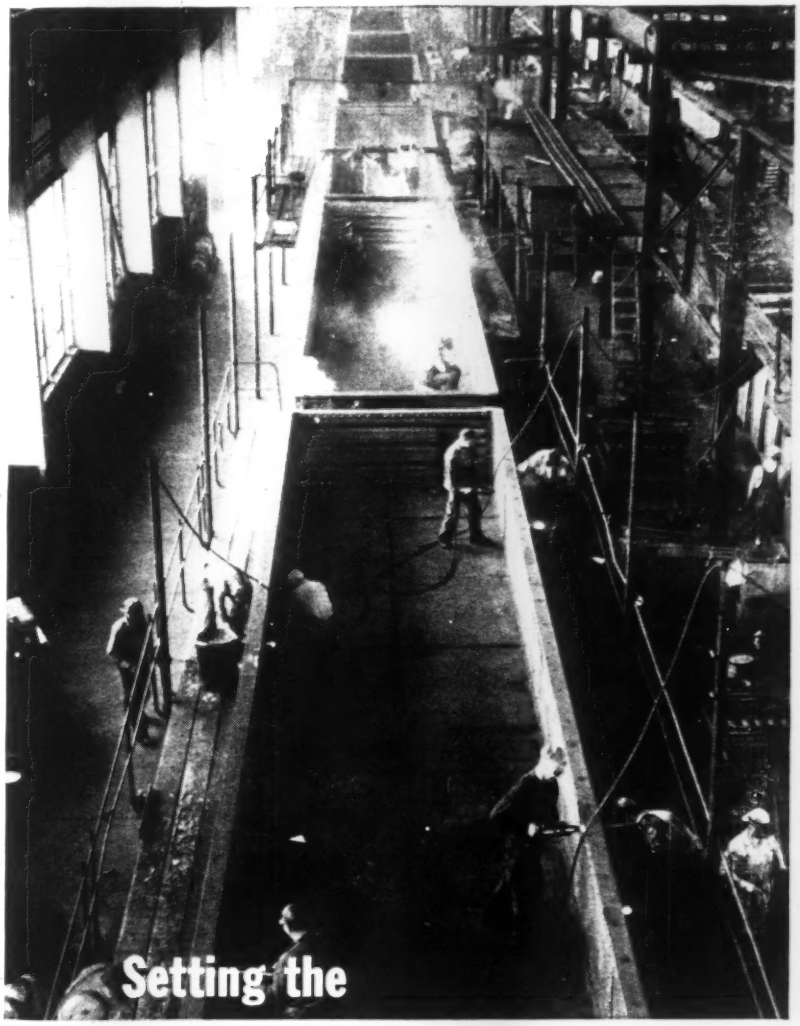
The interest in data processing is keener than that in operations research. OR is both more abstruse and less publicized, for it deals with the systematic application of high-powered mathematical formulas to general management decisions. Still, about 40 of the responding companies now use or are actually planning to use OR techniques in their traffic operations.

Decentralization

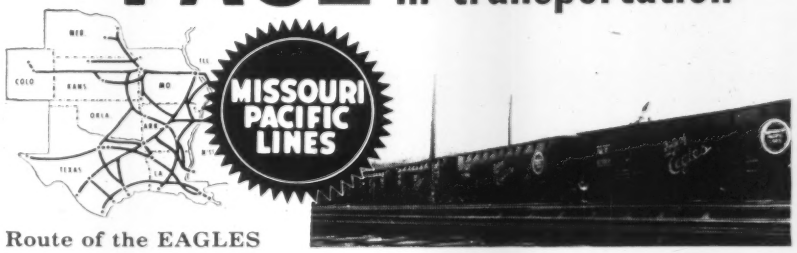
Traffic departments are not as much affected by the current trend toward decentralization as other company functions. For every decentralized traffic department, there were two which were not. Most professional traffic managers prefer a strong centralized department so that they can marshal their best efforts for company coordination—and also so that they can prepare quarterly and annual reports to top management on their dollar savings. Such reports are being increasingly used by traffic managers, for they offer a way of convincing top management of the need for upgrading the traffic job.

How many other middle management executives, traffic managers ask, have so much money to spend each year—spending that cuts across departmental lines and affects the total operation? To put such spending to best use calls for coordination, and coordination calls for a vantage point with a view.

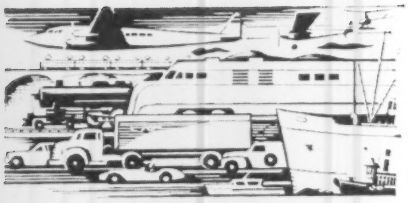
A new freight car every hour . . .
to keep ahead of the nation's needs. Mo-Pac's own De Soto, Missouri shops will turn out 2000 new and 5000 rebuilt cars in 1957!



MODERN PACE in transportation



Route of the EAGLES



HOW TO SELECT THE RIGHT CARRIER

It's all too easy to pay for service that you don't need or for space that you can't use

RICHARD C. COLTON, *Vice President, Lykes Bros. Steamship Co., Inc.*

PROPER ROUTING is probably the easiest way to save on transportation costs, and the amounts saved can be sizable. For example, one company, United Cooperatives, Inc., of Alliance, Ohio, estimates that it has been able to cut freight charges $50,000 a year by carefully controlling the routing of its shipments. And this is not an isolated case.

The primary rule of economical shipping is simple: Don't pay for what you don't need or can't use.

How Urgent?

Delivery dates must be met, of course; so the first step is to check transit intervals for each class of service—parcel post, Railway Express, motor truck, freight forwarder, rail, water, combination rail-water, air freight, and Air Express. Most transportation agencies have advertised freight schedules and follow them with fair consistency.

If there is no rush, then the cheapest service can be selected. On lots up to 40 pounds, this is generally parcel post. On lots in the less-than-carload or less-than-truckload category, it would probably be freight forwarder or motor carrier. There is also, of course, the possibility of shipping by water if the shipping and destination points are served by water or combination water-rail routes.

The idea is to specify high-rated routes, or "premium" transportation, only when it is absolutely necessary. One corporation made a study of the amount it paid out annually for premium transportation and found that about one-third of this extra expense was unjustified. Like most big companies, it occasionally needed air service, express service, and so on, to take care of genuine emergencies. But many of the "urgent" lots could have been scheduled more intelligently. Too often shipments arrive at a receiving department only to wait for days or weeks before they are used.

Premium costs can be kept at a minimum by:

1. Scheduling shipments for release in the most economical quantities and allowing sufficient transit time to permit routing via lowest-rated services.

2. Asking traffic personnel for the best emergency routing when normal routing is not satisfactory.

"Shipping Air"

Another way a company can pay for something it doesn't need is by doing what is known in the trade as "shipping air." If it ships 75 pounds via carriers where the minimum charge per shipment is at the 100-pound rate, it is paying for 25 pounds of "air." If another 25 pounds were sent along with the same shipment, it would ride free.

What can you do about it? Suppose the minimum weight for a carload shipment is 36,000 pounds, and you are sending only 30,000 pounds. You may find that the motor carrier truckload minimum weight is lower, and that you can ship via motor carrier without paying for "air." But if the rail carload rate is less than the truckload rate and you can arrange to ship another 6,000 pounds, carload shipment will be cheaper.

Shipping and ordering in most economical quantities may necessitate an educational program for customers and your own purchasing department. It is necessary to explain fully what steps are necessary for most economical quantities; and it may be well to write a memorandum citing specific cases where failure to order in proper quantities has resulted in extra transportation expense.

Coordination

One way to avoid shipping "air" is to provide for a system of consolidating orders. If two or more orders for the same customer are consolidated on one bill of lading, there may well be savings in transportation costs.

It may even be cheaper to consolidate shipments to different customers in different cities. For example, a company in Philadelphia receives a 15,000-pound order from a customer in Kansas City, and another 15,000-pound order from a company in St. Louis. Shipped individually, both orders would move at

HOW ONE COMPANY CHOOSES A CARRIER

To guide its people through the maze of transportation possibilities, Motorola Inc. developed this guide to various carriers. It sums up the accumulated experience of years. To keep it abreast of changing conditions, the traffic department reviews it once a year. It is used by purchasing, sales, the field selling force, and local plant traffic departments. General Traffic Manager Gerald Werner says, "This form in combination with other forms has in the past few years enabled us to make an estimated savings each year of about $200,000 by reducing premium freight costs."

TRANSPORTATION DATA

TRANSPORTATION MEDIA	DESCRIPTION	BEST APPLICATION (NORMAL)	CAN BE: TRACED	CAN BE: EXPEDITED	COST COMPARISON	REMARKS
Railway Express	Freight handled by Express Co. on passenger trains. Complete pick-up and delivery.	Between large cities where fast passenger service is available.	No	Difficult	Generally cheapest way under 50#.	Between many points service not as good as single line truck or freight forwarding.
Truck	Motor Truck	For all shipments over 50# not requiring emergency air service.	Yes	Yes (in advance)	Most economical method of shipping over 50#.	Recommend truck routings when single line service is available.
Freight Forwarding	Truck pick-up for assembly into large lots for forwarding via rail carload. Includes truck delivery at destination.	For all shipments over 50# not requiring emergency air service.	Yes	Yes (in advance)	Most economical method of shipping over 50#.	Freight Forwarding's service is superior to motor truck service to many off-line & out of the way places, especially west of the Rockies, Florida, New England, Texas & Ariz. Should never be used on shipments of 10,000# or more without consulting Traffic Dept. (Full carload rate not protected.)
Air Express	Complete pick-up and delivery air service using all commercial airlines.	Extreme emergency only! (One day service in most cases.)	Yes	See Remarks	Three to four times more costly than air freight service generally.	We have no choice of airlines used or routing chosen by Express Co.
Air Freight Three Types	Type #1— Regular passenger airlines which also handle air freight. Extra charge for pick-up and delivery	Rush shipments over 30#. Usually as fast as air express. One day most cases.	Yes	Yes (in advance)	2½ to 3 times more costly than truck or freight forwarding. About the same as Railway Exp. over 50#.	Air freight may be delayed to next flight by Air Exp. or mail. (Very rare.)
	Type #2— Air carriers handling Freight only. (Slick-Flying Tigers.)	Rush shipments over 30#. Usually as fast as air express. One day most cases.	Yes	Yes (in advance)	Same cost as commercial air freight. (Type #1)	Cannot be delayed by Air Express and mail.
	Type #3— Brokerage service using all commercial airlines. Complete pick-up and delivery. (Emery Air Freight Wings & Wheels, American Shippers)	Extreme emergency only! As fast or faster than Air Express with better control.	Yes	Yes (in advance)	Usually more costly than Air Express (Except over 100#. Always more costly than Air Freight, (Type #1).	We have no choice as to airlines used or routing chosen.
Rail Carload and Truckload	Full rail car or motor truck.	Where quantity is sufficient to warrant. (Differs with product.)	Yes	Yes (in advance)	By far the cheapest of all methods of transportation.	Total charges depend upon minimum weight required, routing used, and many other factors. Contact Traffic for best method.
Parcel Post	Fourth class regular mail.	Up to 10# where time in transit is not important.	No	No	Always cheaper than Railway Express.	Cost comparisons vary considerably with origin point, size and weight of package, etc. Generally not advisable except on very small packages.
	Fourth class Air mail.	Very small rush shipments.	No	No	Roughly same as Air Express up to 10#.	See above.

TRACING

Tracing is necessary to locate and effect delivery of shipments that have been delayed in transit and not delivered in what would be considered normal transit time.

Learn how soon tracing of a shipment should begin. It is unreasonable to trace a shipment that has not had ample time to reach destination.

EXPEDITING

Expediting of any shipment begins before the goods are actually shipped. Use discretion in expediting. To expedite everything may be to expedite nothing.

use a

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ALL WEIGHING IS DONE ON YOUR CRANE HOOK

OUTMODES COSTLY CENTRAL WEIGHING STATION

COMPLETE LINE OF 110 MODELS NOW AVAILABLE

TYPICAL WEIGHING APPLICATIONS

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HYDROSCALES guaranteed—

to be free of defects in workmanship and materials, and accurate to ½ of 1% of the maximum dial capacity.

Write for descriptive literature explaining model features.

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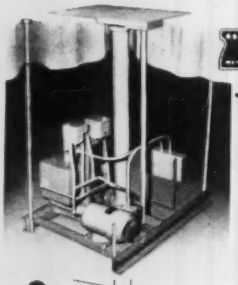
"The world's largest producer of crane scales"



Weld-Bilt Thru-the-Floor

HYDRAULIC LIFT TABLE SIMPLIFIES PAPER CUTTING OPERATION

Actually suspended below the floor, with "table top" at floor level, this special Weld-Bilt Hydraulic Lift unit saves its cost in skid-handling ease in a production cutting operation for a leading paper manufacturer. Lifts a skidload of paper inches at a time to cutting machine level for effortless unloading.

Designed by Weld-Bilt hydraulic engineers, this unit is actuated by single hydraulic ram through convenient foot pedal or push button. Capacity, 3500 lbs., with 40" lift, it, too, can be adapted for other products, cartons, sheet metal, packaged products, in heavier capacities as required—for machine or conveyor operation.

If you have a lifting or handling problem, you, too, will profit by calling for Weld-Bilt engineering aid. Write today.

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REVOLVATOR
GO-GETTER
The MOST COPIED
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EASIEST WALKIE-TRUCK TO OPERATE AND MAINTAIN EVER!
FINGER TIP CONTROLS INCLUDING DYNAMIC BRAKE TO ELIMINATE "PLUGGING" THE MOTOR GOING DOWN RAMPS, AND "ARTICULATED" CONSTRUCTION ADJUSTS TO UNEVEN FLOORS. STEERS EASILY, AND WORKS IN LESS SPACE BECAUSE OF THE DUAL WHEELS & DIFFERENTIAL DRIVE!
HOW ABOUT MAINTENANCE?
SNAP THE LATCH AND LIFT OFF THE COVERS - YOU DON'T EVEN TAKE THE MOTOR OUT TO GET AT THE BRUSHES, AND THE DISK BRAKE HAS A SIMPLE SCREW ADJUSTMENT
WRITE FOR OUR FREE TRUCK INDEX OF GO-GETTER ELECTRIC AND RED GIANT HAND LIFT TRUCKS

REVOLVATOR CO.

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the less-than-carload rate. But they could be shipped as a carload to Kansas with a stop-off at St. Louis. Then the shipper would pay the carload rate to Kansas City plus a modest stop-off charge.

Sometimes it is possible, too, to consolidate shipments for a number of customers in one town into carload, truckload, LCT, or LCL lots, and pay a local drayman to distribute them at the destination point.

Another factor is whether the freight rate applicable includes store pick-up and delivery. Years ago traffic people were responsible for routing shipments only from the freight station of origin to the freight station of destination; since the advent of store door pick-up and delivery, their horizon has embraced store door to store door service. In fact, the traffic manager, the packaging engineer, and the materials handling engineer should work as a triumvirate to insure the most economical handling from the end of the production line to the customer's receiving department.

Here are some of the major considerations in choosing among the various types of service:

FREIGHT FORWARDER: The freight forwarder combines into carloads or truckloads smaller shipments tendered to him by various shippers. He charges the shippers the LCL rate and pays the railroad or truck line the carload or truckload rate, deriving his profit from the difference between the two minus his operating costs. Between most of their main terminals, forwarders' rates are competitive with rail or truck, but in cases where reshipment from these terminals is necessary forwarders often do not give the full range of class rates. Thus, if a forwarder goes no lower than Class 100 to a given destination and is given a shipment rated Class 50 to that point, freight charges will be double what they are by rail or truck. The freight forwarders' success results from the fact that LCL shipments reach their destinations with close to carload or truckload speed, are subjected to a minimum of handling en route, and are always given pick-up and delivery service.

MOTOR CARRIERS: Although motor carriers established themselves primarily in overnight short-haul runs, more and more they are providing commendable long-haul service.

New Air-Van Service moves houseful of furniture coast to coast—overnight!

United Air Lines and North American Van Lines team up to provide a fast, new service for "executives on the move."

Executives transferred to key cities in the U. S. and overseas can be moved lock, stock and barrel without waiting, worry or the expenses of hotel living. New, unique Air-Van Service combines the finest features of North American Van Lines and United Air Lines Air Freight.

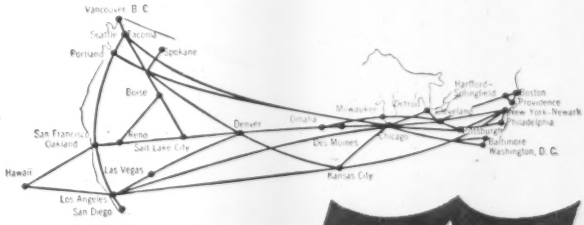
Expert handling. North American Van Lines personnel take over the complete job of packing. Every piece is individually prepared for shipment.

Special containers. New-type Air-Van units hold up to 1200 lbs. each, travel door to door as a sealed unit.

Newest cargo planes. Giant, 300-mph DC-6A Cargoliners operate on regular overnight schedules between 12 major terminals on United Air Lines' 14,000-mile route, serve the main international gateway cities on the East and West coasts.

Reserved Air Freight guarantees that space will be available for an Air-Van shipment on a DC-6A Cargoliner leaving *that night.*

Next-day delivery in many areas of U. S. Air-Van Service usually means that furniture is delivered and unpacked by the time the family arrives.



Typical Air-Van Door-to-Door Rates for 4 Rooms

PHILADELPHIA to DETROIT	$628
BOSTON to CLEVELAND	$644
NEWARK to CHICAGO	$702
LOS ANGELES to CHICAGO	$1038
NEW YORK to SAN FRANCISCO	$1306

Rates shown are for information only, are subject to change, and do not include the 3% federal tax on domestic Air Freight shipments.

Door-to-door service

SHIP FAST...SHIP SURE...SHIP EASY

UNITED AIR LINES

For service, information, or free Air-Van estimate, call the nearest North American Van Lines or United Air Lines representative, or write Cargo Sales Division, United Air Lines, Chicago 3, Ill.

What's Your Loading Problem?

☐ GROUND LEVEL LOADING? ☐ YARD CAR HANDLING?
☐ INADEQUATE DOCK FACILITIES? ☐ TEAM TRACKS?

THIS MAGLINER MAGNESIUM LOADING DOCK ON WHEELS CAN SAVE YOU THOUSANDS OF DOLLARS! REPAY ITS COST IN JUST A FEW MONTHS!

If you have no dock; an older building; a yard handling problem; need extra or movable dock facilities—then the Magliner Mobile Loading Ramp can solve your problem too! Combining magnesium strength with magnesium lightness—Magliner loading ramps can be moved by one man . . . give you a "loading dock" *where and when you want it*! Magliner loading ramps eliminate hand loading . . . speed operations . . . cut expense! For highway trailers and yard cars. Get the Facts—write today for Bulletin DB-211.

Mobile Loading Ramp

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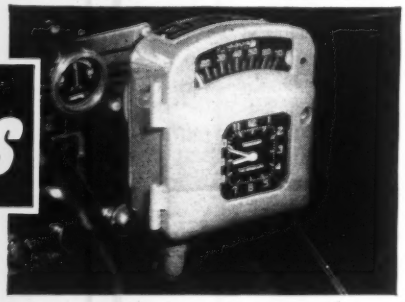
Wagner Sangamo

Tachographs



effect greater operating savings by *encouraging safer driving habits*

Tachographs aid and promote economical driving practices by acting as "safety supervisors" for your company's drivers. They encourage steady driving, and guard against excessive speeding. Better driving habits result in added savings in fuel consumption, maintenance and operating time.

Tachographs are recording speedometers that automatically record permanent trip information on easy-to-read wax-coated charts. These charts show when vehicle started, how fast it traveled, when it stopped, idling time, and distance between stops during any 24-hour period. Illuminated face dials show the time of day, M.P.H. (or R.P.M.), and total mileage. A red light warns driver when your company's speed limit is exceeded.

Because vehicle safety is important to your company, you will find it good business to investigate the many advantages of Tachographs. Send the coupon below for your copy of Bulletin SU-3—it tells the whole safety story. S57-8

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Please send a copy of Bulletin SU-3.

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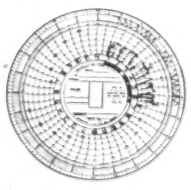
City_____ State_____
We operate_____ (NUMBER) Vehicles



Generally motor carriers' rates are comparable to rail rates, particularly on less-than-truckload shipments. While lots via truckload are sometimes rated higher than if via rail, most minimum weights via truckload are lower. In many territories, motor carriers quote reduced rates on lots as small as 2,000, 4,000, or 6,000 pounds. If your shipment weighs from 18,000 to 23,000 pounds, or perhaps even more, it may be cheaper to ship it as a truckload. If the consignee is not served by a private railroad siding, there will be additional economies, since carload shipments must be carted to or from the railroad's nearest public team track at extra expense. (But truck routes involving more than one carrier may be subject to minimum rate provisions that result in charges higher than those of competitive single-line service.)

Some motor carriers may have cargo insurance as low as $1,000 per vehicle, but most of them have *at least* $20,000 cargo insurance per vehicle; many have upwards of $150,000 per vehicle. Although they are fully responsible for any damage, regardless of their insurance coverage, it is advisable to inform the carrier of any particularly high-valued shipment so that he can arrange for a rider to his policy to afford maximum protection.

There is no law against operating your own truck over the highway in "private carriage" as long as you are hauling only your own goods and obey Federal safety laws. Many companies do this successfully. It works best where commodities are high-rated and there is an assured two-way movement. All cost factors should be checked very carefully.

RAILROADS: The railroads are the backbone of America's transportation system. They are set up to haul anything to any station and their freight rates cover the full range of classification ratings, commodity rates, and so on. There is a trend to divert the smaller lots to other forms of transportation, leaving the railroads primarily as heavy-duty carload handlers—which, after all, is where they make their major profits. A very high percentage of their LCL business has been diverted to the freight forwarders and motor carriers, although they do handle a large number of *carload* lots for the freight forwarders.

POWERFUL REASONS WHY A CHEVROLET STAYS ON THE JOB...SAVES ON THE JOB!

FAMOUS CHEVY 6

(America's most popular truck engine)

- Fuel-saving 8 to 1 compression ratio
- Low-maintenance valve-in-head design
- Two fuel filters for dependability
- Durable alloy steel exhaust valves
- High power-output ignition
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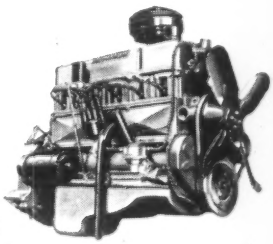


Chevrolet trucks offer the world's most popular truck engines—big 6's, designed soundly yet simply to provide plenty of power at lowest cost and the ability to keep going in rugged service. Like all Chevrolet truck components, these engines put the accent on economy and dependability!

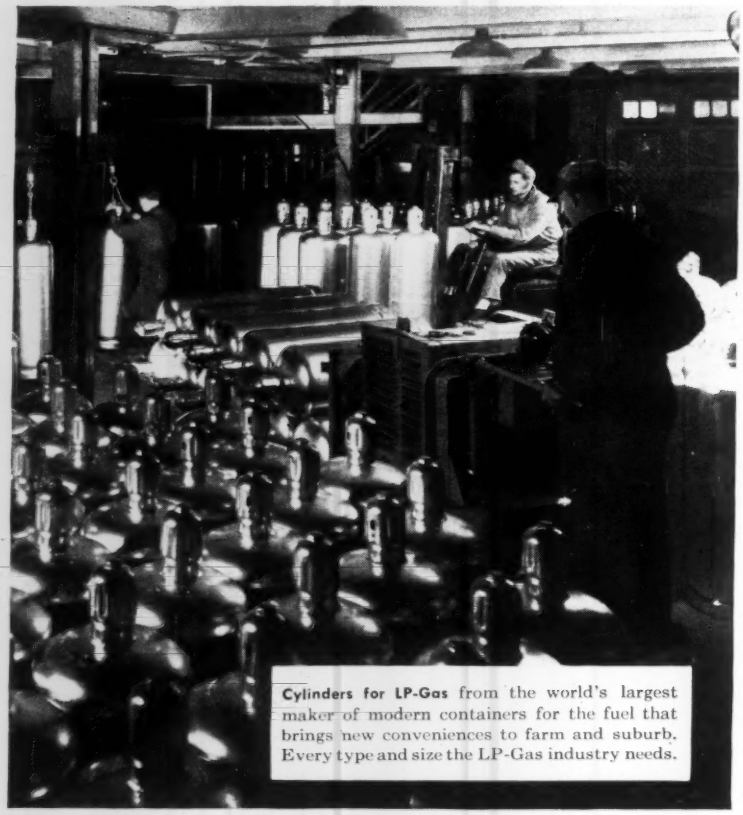
Chevy's the dollar saver *de luxe* of the American road, and many of the reasons why can be found beneath the Chevrolet truck hood. That's where you'll often find one of the great 6-cylinder power-plants that have pulled more payload more miles than any other engines in the history of hauling. They're honest-to-goodness *truck* engines, specially built to *stay* and *save* on the roughest and toughest of hauling jobs. Or, if you prefer a V8, the ones that hum beneath the Chevy hood are at the head of their class for fleet-going short-stroke V8 efficiency.

You'll find that a Chevrolet truck gives you *so much* to save with! Your Chevrolet dealer is waiting to fill you in on all the facts. . . . Chevrolet Division of General Motors, Detroit 2, Michigan.

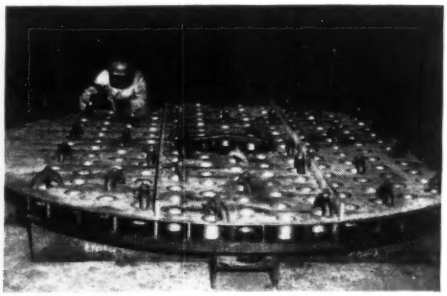
Biggest sellers . . . because they're biggest savers! CHEVROLET

CHEVROLET TASK·FORCE 57 TRUCKS

Industry is in good shape

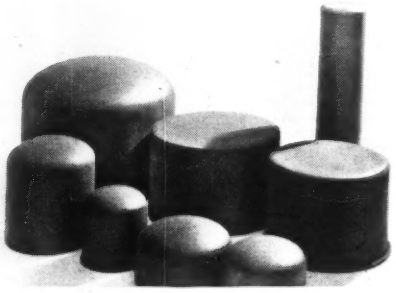


Cylinders for LP-Gas from the world's largest maker of modern containers for the fuel that brings new conveniences to farm and suburb. Every type and size the LP-Gas industry needs.



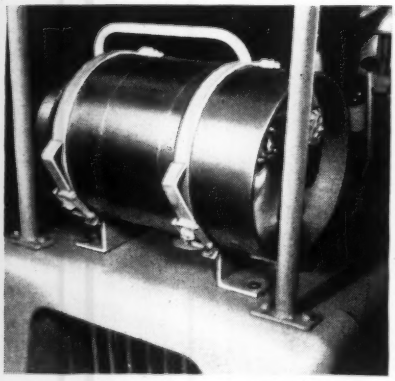
▲ **Towers for refineries,** petrochemical plants. Precision welding on one of 40 trays of a 93' stainless steel column. Custom-built at Downingtown, with 86,680 stainless steel welds.

Deep drawn shapes for lower unit costs. Hackney seamless shapes and shells help produce lighter, stronger products for all industry. ▼



when the shape is built by...

Drums for special chemicals, food and viscous type material. Hackney containers have smoother, crackless surfaces for easier handling, lower cost maintenance and shipping—available in stainless steel, mild steel, nickel.



Lift truck tanks for LP-Gas. Lightweight and replaceable Hackney cylinders make it easy to convert and cash in on this cost-cutting fuel—this means lower operating and handling costs for industrial lift truck users.

Cylinders for gases. Strong but light in weight, these Hackney cylinders are available in many sizes for easier shipment of high- or low-pressure gases. Pressed Steel Tank Company, 1465 So. 66th St., Milwaukee 14, Wis.

Pressed Steel Downingtown

Hackney MILWAUKEE — DOWNINGTOWN IRON WORKS INC.

Manufacturer of Hackney Containers for Gases, Liquids and Solids

Heat Transfer Equipment
Steel and Alloy Plate Fabrication

Pressed Steel Tank Company, 1465 S. 66th Street, Milwaukee 14, Wisconsin

Care should be exercised in naming the carriers in a through route since the lowest freight rates are tied in with specific routes, and erroneous routing on bills of lading may result in extra cost. Before shipments are routed via railroads' LCL services, a check should be made of the number of transfers necessary en route, for every transfer adds to the time in transit and, by additional handling, increases the risk of loss or damage.

Although most railroads continue to provide LCL pick-up and delivery service, the number of points at which this is available has been curtailed sharply in recent years, and in many cases a separate charge is made for the service. One major railroad system has discontinued the service entirely.

Many railroads have instituted the so-called "piggyback" service, in which they accept loaded truck trailers or demountable truck bodies and transport them on specially designed flat cars. Rates to the shippers are generally equal to those published by truck lines, but common carrier trucks are transported at a figure that permits the truck line a profit with a minimum of operating expense.

WATER: Where water or water-rail services can be used, they are almost always the cheapest possible method of shipment.

For domestic shipments, there are the protected or coastwise and intercoastal services between points in the United States—"protected" for American ships because no foreign ships are permitted under the law to operate between ports in the United States. But there is not too much such service left today except for the barge lines running coastwise and on rivers (such as the Mississippi and the Ohio), a few intercoastal carriers, and some occasional service coastwise. In the last category is Seatrain, a water service whereby loaded and sealed freight cars are transported on ships and thence via rail, at through freight rates, to or from private sidings or team tracks.

Offshore or export-import services are furnished by both American and foreign lines. American ships are either tramps, wandering wherever cargo is available, or the so-called liners operating regularly scheduled services on essential trade routes set up by the Federal Maritime Board

What is TELETYPE®?

A Teletype Printer is a communications device – with a keyboard similar to a typewriter – that enables you to send and receive printed messages. With it, written word can be sent instantaneously by wire . . . within the office or plant . . . or clear across the country; to a single destination . . . or to any number at the same time.

In today's business world, in fact, Teletype equipment is often more than a communications instrument. It is a basic element in production control systems . . . its ability to transmit and reproduce text and punched tape is harnessed to office automation . . . it provides a "conveyor system" for channeling complex raw data to a computing center thousands of miles away.

Whether leased through your telephone company or other communication companies—or purchased outright from us—the versatile line of Teletype equipment can be tailored to almost any conceivable demand. For further information, contact your telephone company or other communications company, or send for our free booklet, "The ABC's of Teletype Equipment," Teletype Corporation, Dept. D6, 4100 Fullerton Ave., Chicago 39, Ill.

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and, for the most part, under contract with the Government for operating subsidies as provided in the Merchant Marine Act of 1936. Most lines are members of steamship conferences where freight rates are set to guarantee stability, non-discrimination, and so on.

Concerns that do not have their own export traffic departments may avail themselves of innumerable foreign freight forwarders who, for all practical purposes, act as the company's foreign freight department at a negotiated fee that depends on the work involved. Good foreign service is available on American ships at major U.S. ports to and from all major world ports. Any steamship company will provide full sailing schedules and rates upon request.

THE AUTHOR: Richard C. Colton has spent all his working years in transportation, mainly in industrial traffic management with such companies as Western Electric and RCA. He is the author of *Practical Handbook of Industrial Traffic Management*, a MODERN INDUSTRY BOOK, and a standard work on the subject. For the past six years he has been with Lykes Bros. Steamship Co.

AIR: Shipments via air may go air parcel post, air freight, or Air Express, and the selection will generally depend on the weight of the shipment. For example, consider the rates between Chicago and New York, which are fairly representative. For packages under six pounds, air parcel post is cheapest; from six to nine pounds, the best rate is offered by Air Express; and for ten pounds and over it pays to ship by air freight.

For most shipments, Air Express is the most expensive service available. But it does have the advantage of operating via all common carrier lines, while air freight is restricted to the line selected.

In some instances, air freight is used for normal shipment at over-all costs comparable to those for rail or motor carrier transportation, because it makes it possible to eliminate expensive packaging on high-priced or perishable cargo and in certain cases to save on warehousing and inventory costs. Sometimes it must be used because of the fragile nature of the product, which will be marketable only if it is shipped quickly.

American Seating Company, world's largest seating supplier, has furnished seats for every Major League Stadium, United States Senate and House of Representatives, New York Metropolitan Opera House, Radio City Music Hall and the Indianapolis "500" Speedway.

"Our full-sized seat samples TRAVEL FAR AND WIDE IN FORD WAGONS!"

Says Mr. W. K. FRIEND, *Fleet Manager*, American Seating Company, Grand Rapids, Mich.

"Transporting big, heavy sample selections of theatre stadium, auditorium, church or school furniture all over the country, our salesmen need lots of space and lots of power. Ford has plenty of both. The V-8 power and king-sized loadspace in Ford Station Wagons rate "tops" with our salesmen. Our men vote for the car they prefer from the low-price three—and Ford Station Wagons are always big favorites."

Whether your salesmen carry opera seats or diamonds, whether they travel highways to cities or corduroy roads to mining camps, there's a Ford car or station wagon that's just right for their needs.

With the new kind of '57 Ford, you get all the advantages of the revolutionary "Inner Ford" with its new smooth-riding chassis, new solid-built body, and new comfort-tailored interiors. And there's a choice of powerful, gas-stretching Six or V-8 engines to match your every requirement.

What's more, you'll get big savings with Ford . . . savings that start with the low initial cost . . . savings that continue with economical operation and maintenance . . . and additional savings from Ford's high trade-in value.

See your Ford Dealer today for the best possible deal for your salesmen, their samples, and your savings.

The Ford 6-Passenger Country Sedan, big favorite with American Seating Co.

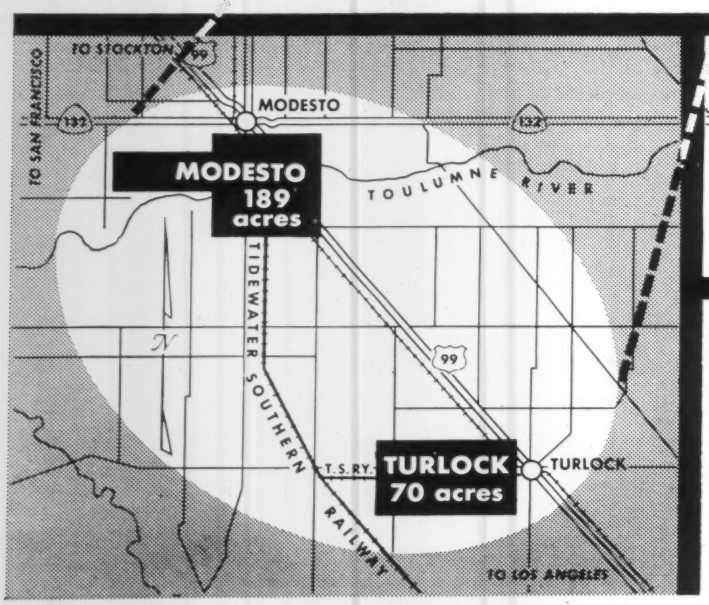
FORD FLEETS ARE LOW COST FLEETS

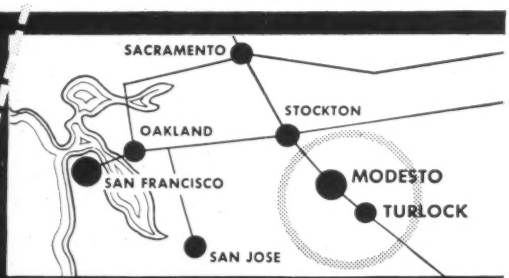
Train your sights on these plant sites

...ideally located in the San Joaquin Valley...only two hours from San Francisco!

- Both of these desirable tracts are zoned for heavy industry; are served by the Tidewater Southern Railway Co. (a Western Pacific subsidiary) and are within the reciprocal switching limits; are near California's principal north-south route (U. S. Highway 99). Modesto is 30 miles (Turlock 43 miles) south of the deep-water port at Stockton, only two hours from San Francisco Bay cities.
- Industrial fuel (natural gas and oil), power, and water are readily available and in good supply. Excellent community life with unexcelled schools and recreational facilities (Yosemite National Park is only a few hours away).
- Both tracts can be subdivided to accommodate large or small plants.

For detailed information (or to arrange for a helicopter survey of the area!) write or call F. B. Stratton, Director of Industrial Development, Room 303, Western Pacific Building, 526 Mission St., San Francisco 5, California.

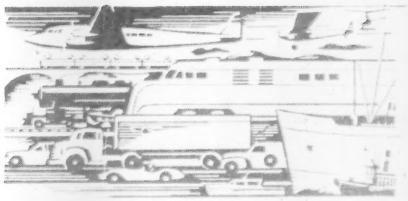




TIDEWATER SOUTHERN RAILWAY

A subsidiary of

WESTERN PACIFIC



Cooperation between carriers is increasing. Here, a bus delivers air cargo.

TRANSPORTATION IS MOVING FAST

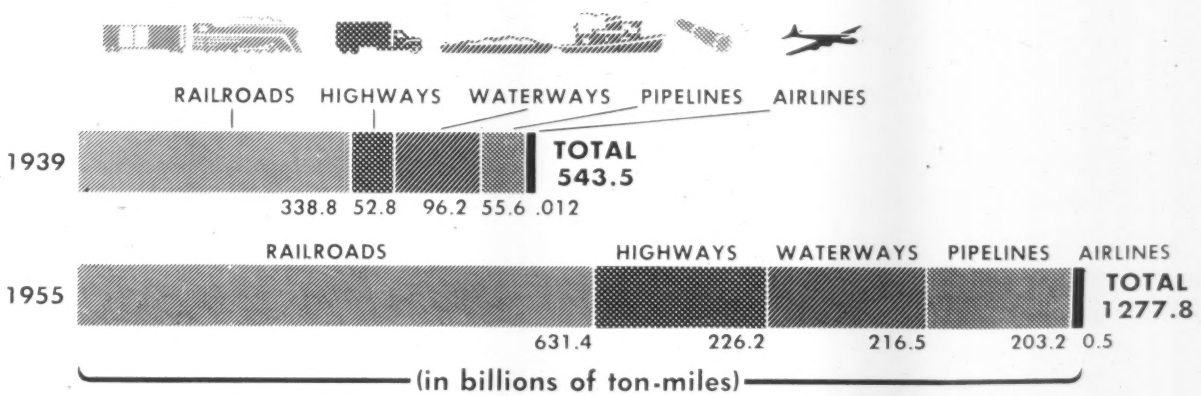
How industrial transportation has changed in recent decades as companies seek new solutions.

A RIP VAN WINKLE awakening in 1957 would be astounded by the sweeping changes in transportation that have taken place in the past few decades. The railroads are almost completely dieselized. Boxcars may still look like boxcars, but within the past year or two the railroads have developed new electronic control centers to shunt them around more quickly. New boxcar liners and methods of packing have cut sharply into the damage rates.

Trucking has changed even more noticeably. Truck-trailers are longer, lighter in weight, and carry larger payloads over longer runs more economically than in the past. But because of regulatory restrictions and high labor costs, the benefits of technology have not always been passed

HOW TRANSPORTATION HAS GROWN

VOLUME OF TRAFFIC CARRIED (in billions of ton-miles)



Although they account for almost twice as many ton-miles, railroads have a smaller share: 49.4 per cent as against 62.4 per cent in 1939. Highway carriers have 17.7 per cent of the total ton-miles now compared with 9.7 per cent in 1939. While inland waterways account for the same share, 17 per cent, as in 1939, volume on the Great Lakes has slipped percentage wise as traffic on rivers and canals has boomed.

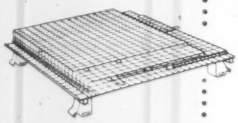
The sharpest rise of all has been chalked up by the airlines. Although their share of ton-miles at 0.038 is still very small, the actual volume has increased about 60-fold since 1939.

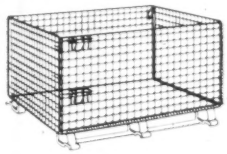
Source for the data: Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

what's your..

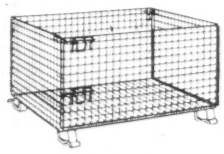
CARRYING CHARGE?

6,000 pound unit loads are efficiently and economically handled in USP Palletainers—and, empty Palletainers can be "flat-folded" for space savings and lower return rates.

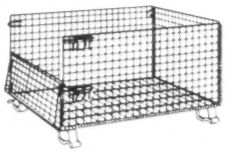




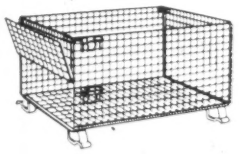
Bearing Plate



Hi-Lode



Warehouse



Bulk-Lode

What's it costing you to handle materials to and from production or assembly lines, in and out of storage, truck loading and transporting? There is an *easy way* . . . a practical, economical way with versatile USP Palletainers.

Palletainers have simplified materials handling for thousands of plants in scores of industries. And, these practically indestructible containers can save you valuable time and money both in and out of your plant. Whether you're processing, storing or distance-hauling, Palletainers provide the practical answer. Available in four basic types and a broad range of practical standardized sizes. They're engineered for safer handling, ceiling high stacking, faster 8-way entry for fork truck plus the advantages of content visibility for speedy inventory.

For Full Information on Palletainers...
including names and locations of users, or for obligation-free consultation on Palletainer application in your plant—write, wire or call Union Steel, today!

USP PALLETAINERS®

manufactured only by:

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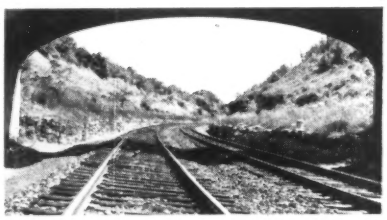
ALBION, MICHIGAN

along to the shipper. Many shippers also feel that the flexibility they need can only be achieved by getting their own trucking equipment. Consequently, about 85 per cent of the more than 10 million trucks on the nation's roads today are privately owned. Use of leased trucks has also risen considerably in the postwar decade: 150,000 units today against 45,000 ten years ago. With tightness in money markets and high interest rates, many companies are looking into leasing.

RAILROAD VISTA

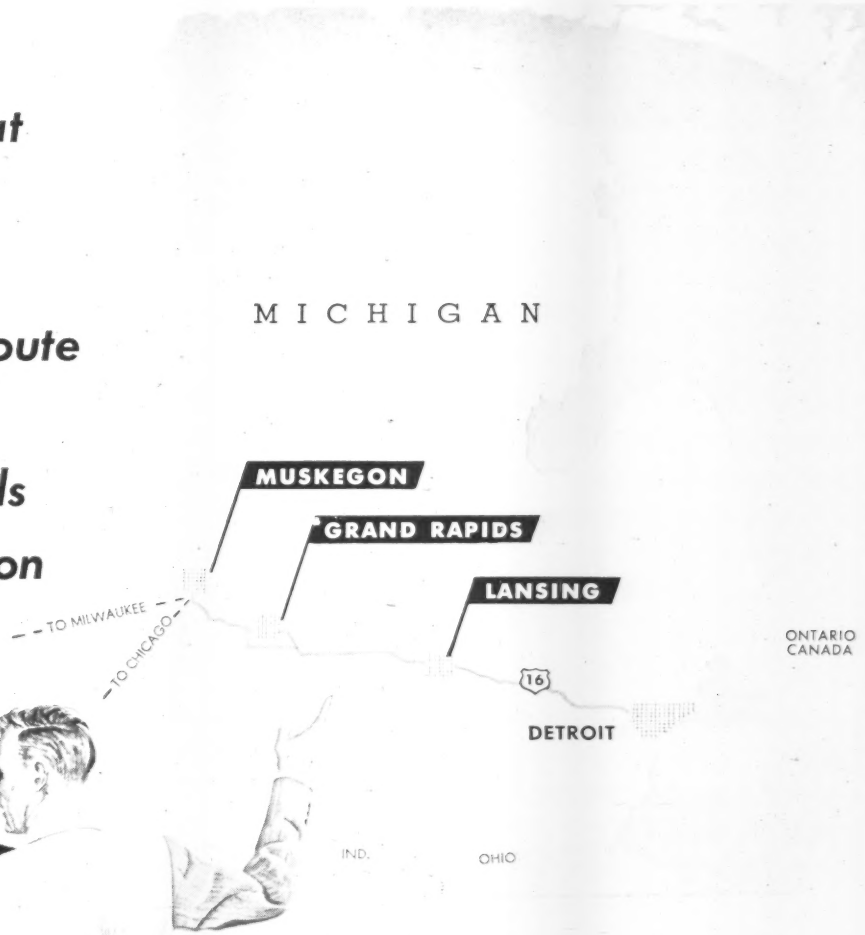


Howe Photograph

Fifty thousand towns all stitched together
By a double thread of silver glinting in the sun,
A quarter million miles of shining tether
Binding all the forty-eight states as one.
Three thousand miles and no stop for customs,
Three thousand miles on one kind of money,
Three thousand miles on American slang,
Three thousand miles and only one ticket,
Freedom begins with the Boston & Maine.
Democracy ends with the old Santa Fe.
—A. M. S.

Company-operated truck fleets are symptomatic of the development in the past few decades of a custom-made transportation system in this country. In their search for the fastest yet cheapest method of getting goods from one point to another, shippers and carriers have developed specialized equipment in almost every industry. For instance, in the chemicals industry tank trucks have been developed in recent years to handle a wide variety of chemicals. Since they save considerable time on hauls of up to about 350 miles, they eliminate the extra expense in removing the chemicals, which frequently become solid if they are

There's Great Industrial Opportunity Along the Route to Lansing, Grand Rapids and Muskegon



At one end of the road is Detroit, automotive capital of the world. At the other is Muskegon, busy industrial center, with one of the best harbors on the Great Lakes—just across Lake Michigan from Chicago and Milwaukee.

In between are two of America's finest cities of moderate size, Grand Rapids and Lansing. Grand Rapids produces much of America's finest furniture, but the major part of its large industrial production comes from metal-working industries. Lansing, the state capital, is home of Oldsmobile and many diverse industries. Michigan State University is in East Lansing.

Also along this route are substantial communities of smaller size where living is pleasant and industry busy.

None of them—in fact, no community in Michigan—is more than 85 miles from the Great Lakes-St. Lawrence system. And none is more than a few minutes' drive from beautiful inland waters that offer boating, fishing and swimming.

Put your plant where industry thrives and business is good—in Outstate Michigan.

For expert, confidential assistance involving no obligation on your part contact Industrial Development Dept., Consumers Power Company

CONSUMERS POWER COMPANY

An Electric and Natural Gas Utility Company Serving 3,700,000 People in Outstate Michigan

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When your shipping problems begin to look like a monster call Santa Fe.

Put our staff of freight experts to work for you and find out how well Santa Fe can handle anything that needs to be shipped to or from points in the West or Southwest.

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allowed to cool in the tank.

While other segments of transportation have boomed, there has been a serious fall-off in coastal and intercoastal shipping. Today there are only about 100 vessels operating in this area; before World War II there were more than 400. Foreign ships are forbidden to operate between U.S. ports and American operators find the run less and less profitable because of high handling and labor costs. However, the trailership (see pages 112 and 159) will most likely change this situation, just as the development of the high-powered diesel towboat, lightweight barges, and radar brought a revival to river traffic in recent decades.

Few plants originate all the component parts of the products they produce. They are, instead, increasingly assembly plants where production schedules depend on prompt and flexible delivery of component parts. This and the continual efforts to reduce inventories in relation to output have worked in favor of the truckers. The dispersal of industry and the entire suburbanization of our society have also brought the truck into increased prominence.

None of this, of course, means that the iron horse is going the way of the buffalo. For renewed efforts toward integration (see piggybacking on page 111) and the application of automation augur well for the railroads.

The railroads feel that their relative loss in traffic (see page 105) can be charged to Government regulation, which, they say, hampers their ability to meet the lower rates of other carriers, and also to Government subsidies for highways, inland waterways, airlines, and airports. Of course, the other carriers disagree and insist their flexible, fast service is more in keeping with modern industry. Because of the maze of mathematics involved in computing the most economical kind of carrier for specific commodities, various studies have come up with clashing conclusions. Perhaps the new Transportation Center at Northwestern University, where a long-range study-in-depth of transportation is just beginning, will come up with the answers.

In the meantime, it is up to the consumers of transportation – the shippers in industry—to push for the most advantageous methods of getting their goods to market.

Drivers get set to "hit the road" with the first of the 1000 new Power Giants ordered by Ryder System, Inc.

Dodge awarded 1000-truck order

"We picked these Dodge Power Giants to give our truck-lease customers the finest hauling and delivery operation at lowest cost", James Ryder (right), president of Ryder System, Inc., tells Lee F. Desmond, vice president of Dodge.

Ryder System, Inc., world's largest exclusive truck-leasing company, puts low-cost operation first... picks Dodge for record order

When your business is leasing trucks, there's only one way to make it pay off. And that's by keeping your operating costs per mile at rock-bottom levels. That's why Jim Ryder, president of Ryder System, Inc., decided on Dodge when he needed new trucks. He knew that Dodge trucks are built to take extra miles without extra costs.

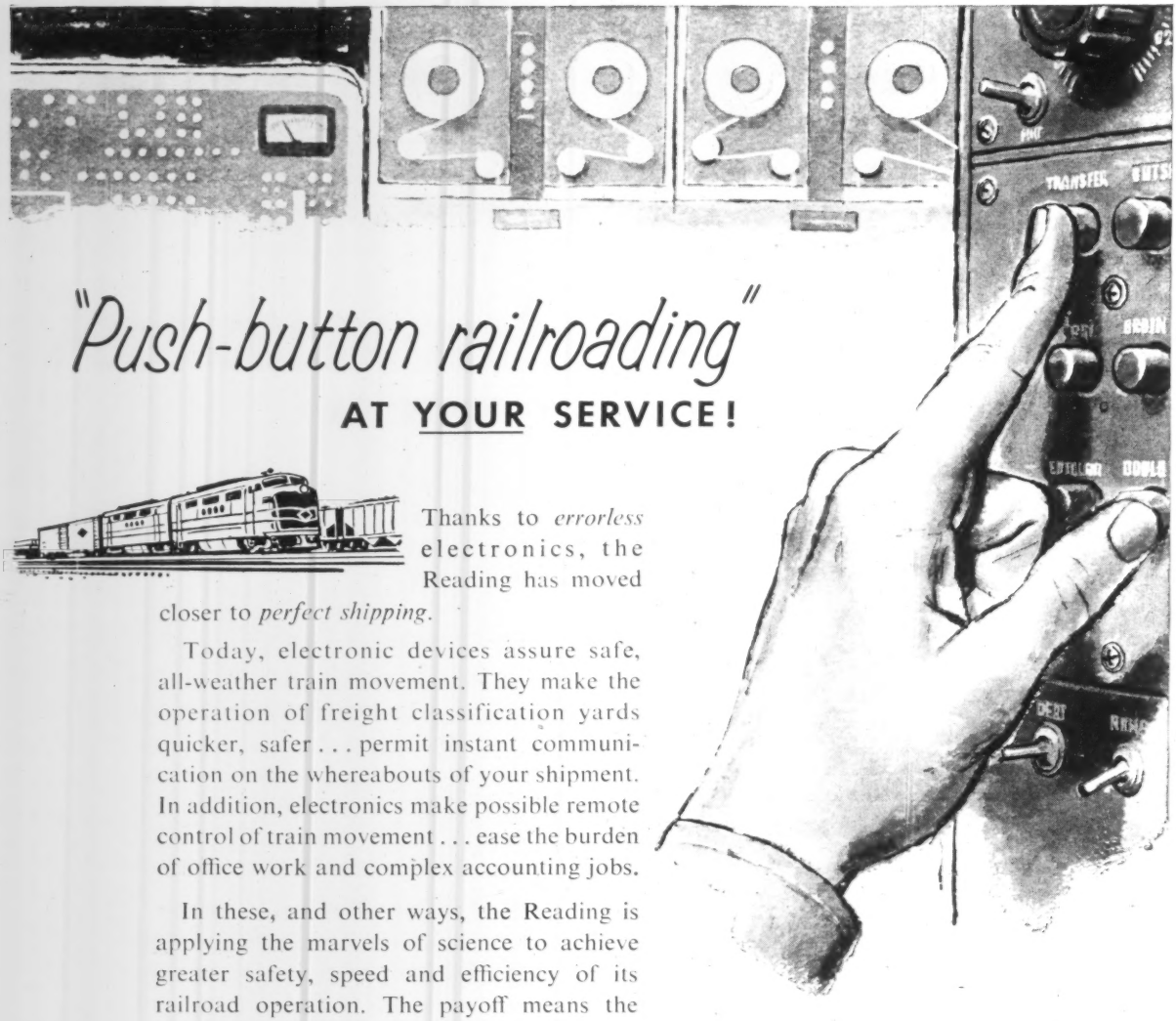
For instance, new Dodge *Power Giant* V-8's are the most powerful of the low-priced three. And that extra power lets you handle the ruggedest hauling jobs with less engine strain. Less strain means less wear and, of course, fewer repairs. Exclusive Power-Dome design delivers premium performance on regular gas, too. "I save money both ways", says Jim Ryder. "But more important, I know that my customers will be thoroughly satisfied with any Dodge *Power Giant* they lease."

Why not do as Jim Ryder did . . . check into the facts with your Dodge dealer. You'll find a Dodge *Power Giant* will pay off for you, whatever your business.

DODGE

Power Giants

Most Power of the Low-Priced 3



"Push-button railroading"

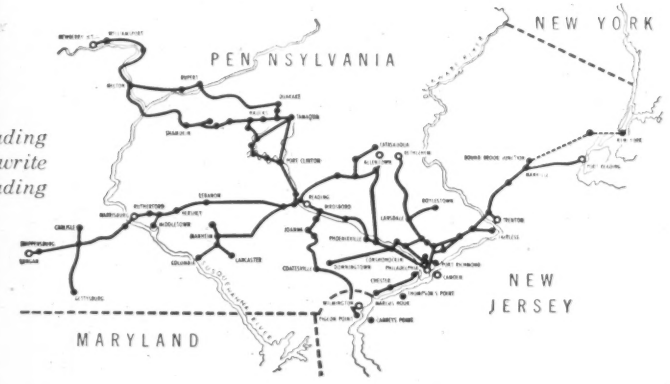
AT YOUR SERVICE!

Thanks to *errorless* electronics, the Reading has moved closer to *perfect shipping.*

Today, electronic devices assure safe, all-weather train movement. They make the operation of freight classification yards quicker, safer . . . permit instant communication on the whereabouts of your shipment. In addition, electronics make possible remote control of train movement . . . ease the burden of office work and complex accounting jobs.

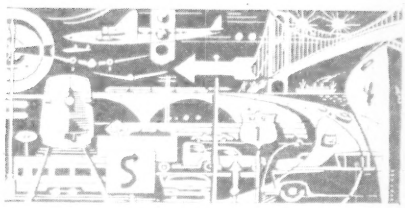
In these, and other ways, the Reading is applying the marvels of science to achieve greater safety, speed and efficiency of its railroad operation. The payoff means the *utmost* in dependable freight service for you . . . *through the Reading!*

For full details, contact the Reading representative nearest you, or write Freight Traffic Department, Reading Terminal, Philadelphia 7, Pa.



Reading Lines

Reading Railway System



HOW WILL GOODS MOVE IN 1965?

Piggyback is here, and so is fishyback. What does the future hold and what will be effect of new trends?

LIKE OTHER PARTS of the distribution process, transportation is going through a period of trial that will likely lead to massive breakthrough in the next few years. And it will be certainly welcome when it comes, for distribution has long been the whipping boy for high consumer prices.

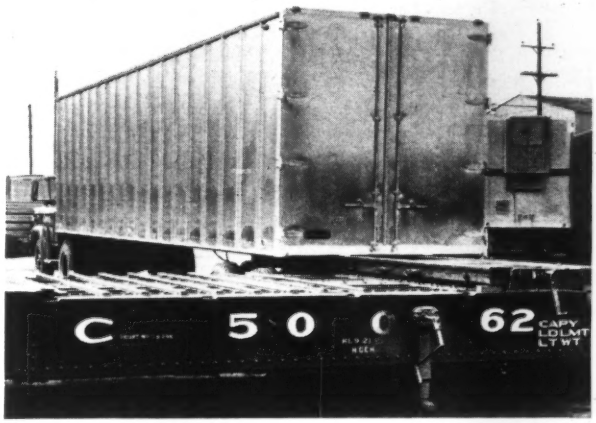
Manufacturers have made their production lines as streamlined as a teardrop, but too frequently the benefits do not get through to the consumer. Unlike most of the world, our economy does not face the vexation of sluggish production. Ours is the problem of spurring consumption. We have to create more new markets. One of the chief ways industry can reach new markets is by improving the methods of transportation. On these pages, you'll find a sampling of new approaches.

Of course, many more could be mentioned as harbingers of the future: overland conveyor belts for bulk commodities; gigantic pneumatic tubes for quick distribution to

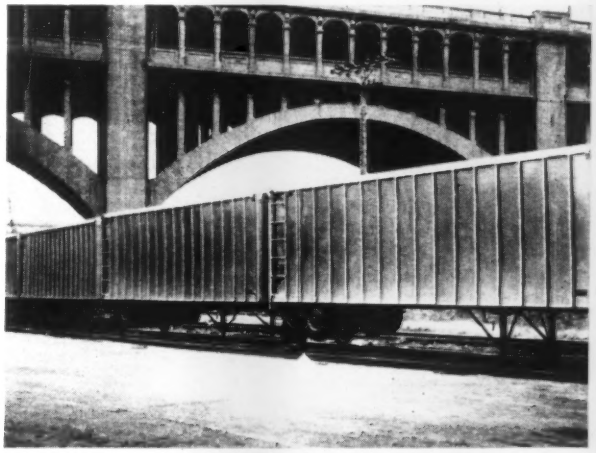
Railroads climb on the piggyback wagon

One proponent of piggybacking—the carrying of loaded truck trailers on railway flat cars—predicts that the railway boxcar is headed for the Smithsonian Institution. Piggyback—which is provided by about 50 of the nation's 130 Class I railroads—combines the economy of rail hauls with the flexibility and door-to-door service of the truck.

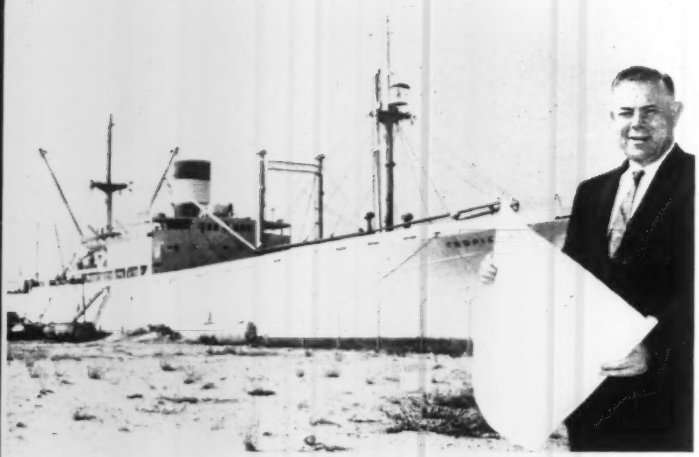
And it is these very benefits which have caused most railroads to refuse to provide the service to common carrier truckers. Most of the trailers carried are either the shippers' or owned by motor subsidiaries of the railroads. While it has grown enormously in the past few years, piggyback still accounts for only about 1 per cent of all railroad carloadings.



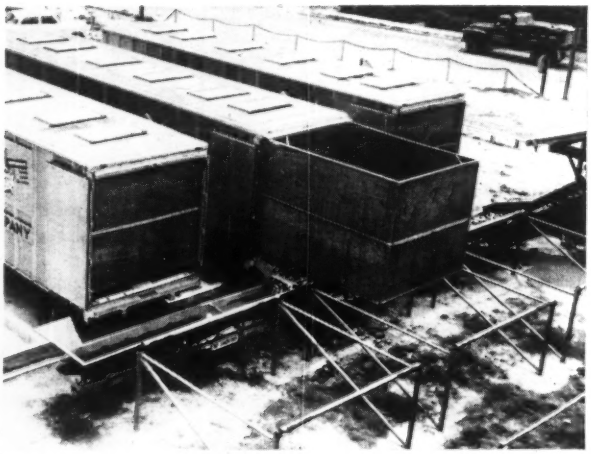
A truck backs its trailer onto a New York Central flatcar in this new form of piggyback developed by New York Central in cooperation with Fruehauf Trailer Company. The transfer of the loaded wheel-less trailer takes approximately four minutes, needs no special lifting equipment, and can be accomplished by one man.



As much at home on the rails as on the highway is this new combination Railvan, developed by the Chesapeake and Ohio Railway. It features retractable wheels (see arrow) for use on two surfaces. The Railvan offers obvious advantages in avoiding loading and unloading for companies lacking railroad sidings.



A tanker full of orange juice brings a sunny smile to the face of President Anthony T. Rossi, Fruit Industries, Inc. He has been able to cut the transportation cost on each quart of his Tropicana orange juice from 5 cents to about one-half cent on the trip from the Florida groves to the processing plant in New York City.



Tin cans are handled like so many peas in this new method of packing and shipping developed by American Can Company. Cans are poured, rather than manually positioned, into the truck trailer liner which is moved out at destination by a slat conveyor developed by Link-Belt Company to facilitate unloading of shipment.

warehouses; pipelines for pulverized coal, limestone, and other basic materials; and others. But probably the new facts of life for shippers in the next few years will be piggybacking, the trailership, the national highway program, the St. Lawrence Seaway, which opens in 1959. All these are in keeping with industry's efforts to cut down on the number of times a shipment is handled and to increase the bulk of shipments.

The plans for fishyback operations are dazzling. But almost all dazzle is still on paper. The Maritime Administration has approved applications for mortgage and loan insurance for several roll-on-roll-off trailerships and dozens of others are pending. And the president of the American Merchant Marine Institute predicts that by 1966 the nation will have a roll-on-roll-off merchant marine of 200 to 250 ships for domestic trade.

The savings to shippers will result from the fact that handling costs generally run six times higher per ton of cargo on a conventional ship than on a trailership while loading time is cut perhaps 75 per cent. About a year ago the Pan-Atlantic Steamship Company began regular service between Port Newark and Houston, Tex. loaded wheel-less trailer bodies are lifted by crane aboard converted tankers, which

Shortcuts to the market result in savings

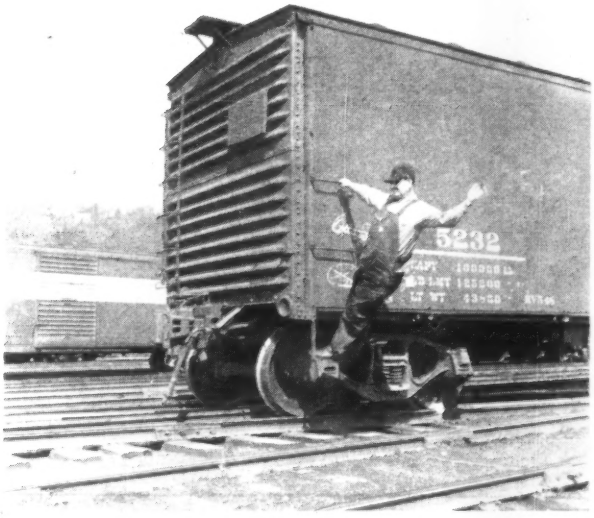
Unnecessary handling that eats into profits is avoided by the Geo. A. Hormel & Co. meat packing company by use of self-contained refrigerated units. They are sealed at the Austin, Minn., packing plant and move by rail, four to each flatcar. Each unit is easily handled by a one-man fork-lift truck; because they are readily transferred between carriers, the units provide considerable flexibility. The system, still in the testing phase was developed by Hormel and North American Car Co. with the help of Clark Equipment Co.

Direct from the production line, Hormel's meat products are placed in the special refrigerated units that travel by flatcar.

When the refrigerated units reach large metropolitan markets, they are transferred to trucks, become the delivery truck body.

The meat products go directly to supermarkets and other stores, eliminating temperature changes, extra handling, and delay.

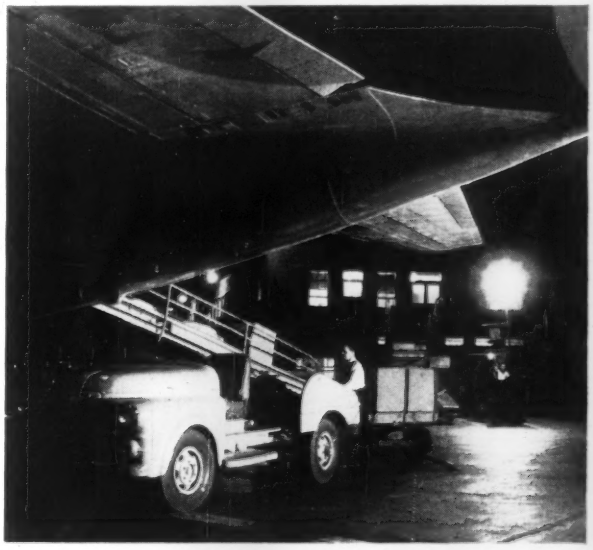
4 more reasons your new plant will be "Closest to America" in Greater Cincinnati...



A $2-billion-plus market itself, Greater Cincinnati stands at the center of a 400-mile circle that takes in 40% of America's buying power. This big market will be linked to your new plant by 8 trunk line railroads with modern freight terminals—to name just one type of facility at this transport hub.

Besides being closer to markets, Cincinnati is closer to the country's major sources of heavyweight raw materials like coal and steel. Low cost river transportation brings them right to the city's doorstep via six certified water freight carriers. Their annual tonnage surpasses that of the Panama Canal.

139 motor freight lines and numerous contract carriers offer rapid trucking service via 9 U.S. highways and many fine state and county roads. And a large share of the $250-million worth of progress Cincinnati voted itself last fall is earmarked for further highway expansion and improvement, already well underway.

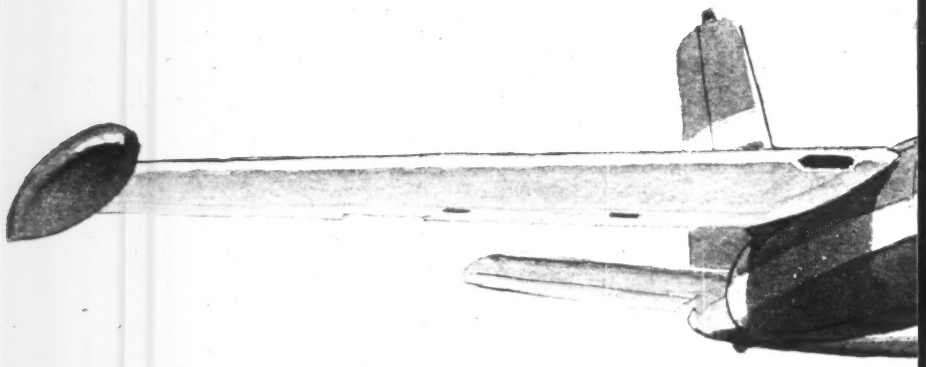


Greater Cincinnati also has one of America's largest and finest airports, located just 12 miles from the downtown business district. The 6 scheduled airlines that serve the area include one devoted exclusively to air freight. And convenient Air Taxi Service provides direct links to 7 other local airports.

Transportation, *however, is just one part of the big picture. You are looking for more . . . and Cincinnati offers much more. Industrial harmony, for instance. Cultural maturity. Good government. Good schools. For the full story . . . plus a thorough (and confidential) report on how Cincinnati fits your own special new-plant needs . . . write or phone our Industrial Development Department today.*

THE CINCINNATI GAS AND ELECTRIC COMPANY

The Union Light, Heat and Power Company

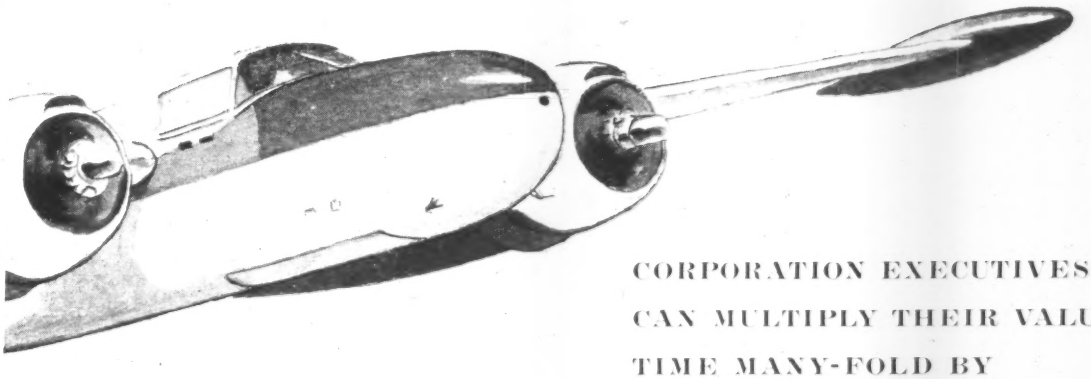


The 1957 model ON MARK

Soon to come and ready for delivery in 1959... the ON MARK 450, a 14-place 425 mph executive transport, the first airplane designed especially for corporate use with twin turboprop engines and pressurized cabin.

ON

10-100



CORPORATION EXECUTIVES
CAN MULTIPLY THEIR VALUABLE
TIME MANY-FOLD BY
ADOPTING THIS MODERN
INDUSTRIAL TOOL

Executive Airplane

Faster than the fastest scheduled airliners, as safe as the safest of them, and always available at a moment's notice when faraway situations arise, the 1957 ON MARK EXECUTIVE AIRPLANE allows top-level business men and necessary assistants to *be there today* to close sales, address multiple-city meetings, make technical decisions or just plain trouble-shoot. Proven beyond question in profitable, routine business, the famous ON MARK B-26* is now in daily use by many firms in the United States and abroad. Its enviable safety record and its swift and rugged capabilities are well known to the pilots who man these astonishing corporate aircraft.

THE 1957 MODEL of the ON MARK B-26 incorporates many innovations that improve its operation, safety and comfort. Already the fastest executive airplane in the skies, the 1957 ON MARK has a more spacious cabin... longer and wider than in previous models. Entrance door is on the side, toilet facilities have been improved and wide picture windows allow better vision from the cabin. Radar installations, electronic autopilot, and anti-skid brakes are optional, as are other new accessories that promote the utmost in safety of operation.

With wing-tip tanks that extend fuel capacity to 1565 U. S. gallons, the 1957 ON MARK B-26 has a range of 2700 miles. Flights across the nation non-stop are entirely feasible, as are similar long-range trips to all important points in Canada, and Central and South America. Long recognized for its safety and dependability, the ON MARK B-26 can cruise at over 200 mph on one engine and with only basic maintenance routine it is ready to go at any time, even in heavy weather.

**The* ON MARK B-26 *is a completely remanufactured Douglas B-26 airplane. It is not simply refurbished or remodeled.* ON MARK *is the Douglas Aircraft Company, Inc., licensee in manufacturing and selling parts for the B-26.*

THE MAXIMUM FLEXIBILITY of business travel and generous rewards that come only with the satisfaction of full accomplishment for top executives makes the 1957 ON MARK airplane a relatively inexpensive industrial tool. Company principals who now use previous models state that cost of the ON MARK B-26 seems quite moderate when the gratifying results of its use are considered.

Please allow us to send a brochure showing further details and arrange for your inspection of the airplane at which time general cost figures and possible leasing arrangements can be discussed.

MARK
Engineering Company

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leave every four days. But as yet there is no roll-on-roll-off service for domestic transportation. (See page 159 for export use.)

The first may very well be the operations planned by Pacific Trailer Ships Inc. for service between Los Angeles and San Francisco. Scheduled to begin in 1959, the operation will involve two trailerships each with a capacity of 300 wheeled trailers of about 35 feet in length. Franchised by the California Public Utility Commission, the company plans to send a loaded trailership every night but Saturday on the eighteen-hour trip between the two ports. Rear Admiral L. Curtis, who heads up the operation, estimates that he can deliver a loaded trailer from one port to the other for about two-thirds of the over-the-road costs of driving it there.

Greater Change Ahead

Looking at the trailership development as a whole, Paul A. Admundsen, executive secretary of the American Association of Port Authorities says: "We are on the threshold of a greater change in port development and operation than any we've experienced in the past 40 or 50 years." Perhaps the most intensive use of trailerships will take place between ports on the Great Lakes and the markets of the eastern seaboard.

The opening of the St. Lawrence Seaway will create a fourth seacoast for deep-draft vessels. New plants are burgeoning along its way. Transportation is generally the most important factor, after labor, in plant location. For instance, Fruit Industries, Inc. (see photo page 112) is planning new plants on the Great Lakes to reach at lower cost the Midwest markets.

But of even more significance for shippers in the years ahead will be the modernization program for the 40,000 mile National Interstate Highway System, for which the government is to spend $33 billion at least over the next dozen years. That program, plus grants-in-aid to the states for local improvement, should do much to unsnarl the traffic tie-ups in many cities.

But whatever the future improvements in transportation may be, it is important for alert managements to watch closely for their coming so as to edge ahead of competition in the race that never ends.

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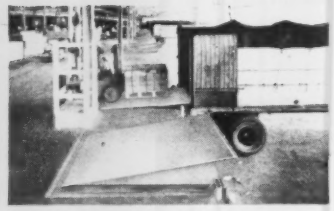

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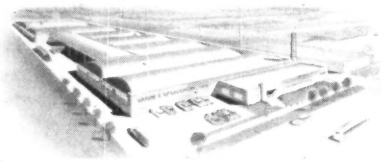

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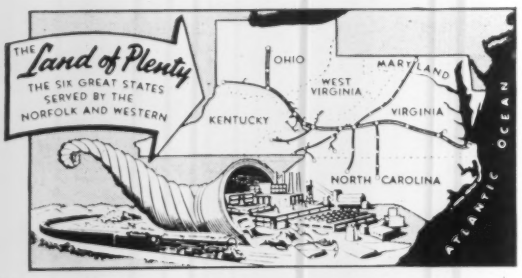

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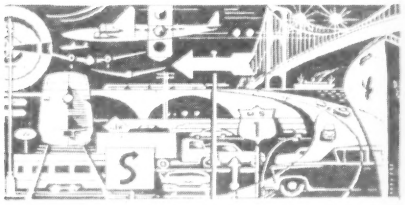

Top Management Checklist

DO YOU MAKE THESE COSTLY ERRORS?

Even in the best-managed companies, traffic operations offer rich opportunities for savings.

TOO FREQUENTLY companies go along doing things the same way year after year merely because a procedure has been established. The conditions that called for the original procedure may no longer exist, but the method lingers on. This is particularly true in traffic departments, which generally are not under tight management control.

You can rate your company's TQ (Transportation Quotient) by checking any error in the list below that your company may be making. If you check too many of the 33 errors listed, it is time for a long look at your entire traffic operation.

☐ Failing to provide the routing for products sold FOB your plant.

☐ Not using the traffic department as a source of information on competitors' transportation costs.

☐ Neglecting to inform the sales department promptly when delivery delays seem likely to occur.

☐ In small companies, not having one major executive responsible for all movement of goods.

☐ Neglecting to provide standardized methods for the operation of traffic departments in multi-plant companies.

☐ Neglecting to obtain information on transportation costs for each product in the line.

☐ Concentrating on getting the cheapest transportation possible without regard to service to customers.

☐ Choosing a carrier for its lower rate without considering the expense of extra crating, local truck pick-up, and similar factors.

☐ Relegating traffic management to lower levels in middle business.

WHEN ECONOMY BACKFIRES

In one company the good intentions of a shipping clerk led to many wasted traffic dollars. He thought he had discovered a way to save the company money by reusing shipping crates that appeared too durable and useful to be discarded.

The crates were those used by the company's overseas suppliers, and they were just the right size for outbound domestic shipments.

Only after several months was it discovered that the reused crates weighed more than the products themselves and were considerably stronger than necessary.

☐ Allowing the sales department to exaggerate the urgency of an order, and conceal the real date the order is needed from the traffic department.

☐ Using premium transportation over the weekend.

☐ Not informing the sales department that the premium transportation requested will wipe out the margin of profit on some shipments.

☐ Buying a new plant with a rail siding without checking with the railroad about any possible plans to abandon it.

☐ Not reviewing the bill of lading periodically to see that it conforms in details with the current materials in the product and recent changes in packaging.

☐ Using the same transportation methods year after year while both markets and technology are rapidly changing.

☐ Failing to weigh the importance of transportation costs in considering bids from various suppliers.

☐ Not letting suppliers know the kind of truck you may be sending to pick up raw materials.

☐ Ignoring the savings that may be realized by consolidating inbound shipments, merely because you buy FOB your plant.

☐ Failing to review periodically the exact cost of operating your own trucks instead of using common carriers.

☐ Limiting the liaison of traffic with other departments to bailing them out of trouble.

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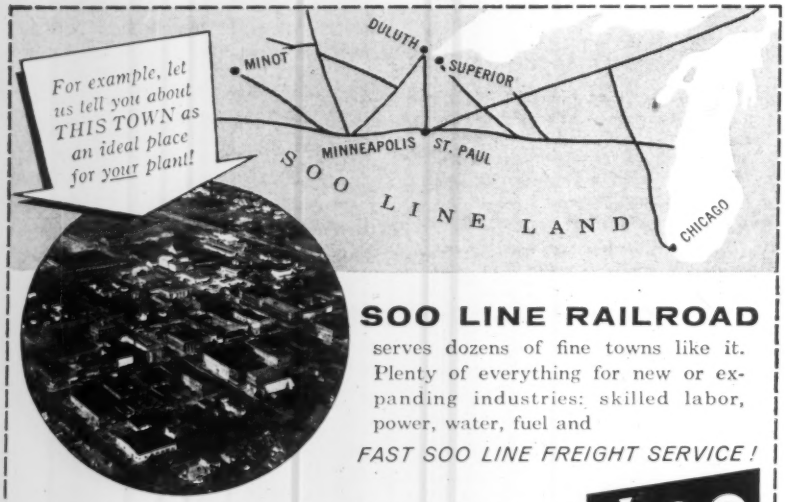

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SOO LINE

☐ Not bothering to find out when customers' trucks are coming so that you can save valuable time in loading.

☐ Not consulting the traffic manager at the very start when you are planning for a new plant, new product, or new packaging.

☐ Neglecting to indicate value of shipment when freight tariff provides for lower rates.

☐ Shipping new products under wrong commodity descriptions—caused by not obtaining a classification ruling beforehand.

☐ Neglecting to consolidate shipments to obtain volume rates and avoid minimum charges.

☐ Not shopping around for better rates and assuming that all carriers of the same kind are obligated to charge the same rates.

☐ Failing to indicate clearly the duties of the traffic manager, particularly in related areas—such as materials handling, packaging, warehousing.

☐ Neglecting to work out specific methods to measure the efficiency of the traffic department.

☐ Limiting the work of the traffic manager to little more than rate negotiation.

☐ Neglecting to compile a monthly report on the spending for premium transportation.

☐ Stating the total weight of several commodities on the bill of lading rather than the weight of each item that should be rated differently.

☐ Neglecting to consider, as volume grows, the possible advantages of regional warehouses to bring about lower freight costs.

☐ Attempting to cut transportation costs by passing them along to the purchaser by selling FOB your plant.

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THE EMPLOYEE PUBLICATION

continued from page 63

Some editors, or their managements, have attempted to make their publications two-way communication media through the inauguration of question-and-answer columns—questions from employees about company programs and policies and answers from the management—but they constituted only about 15 per cent of the concerns answering this survey query. This is only a little higher percentage than turned up in a recent survey of 163 members of the American Association of Industrial Editors on the same subject. Editors then reported that they had a tough job selling management on the idea, and an even tougher job getting the employees to turn in questions. Those editors who *do* run question-and-answer columns in their publications, however, report that they are among the best-read features.

In some cases, of course, the communication job is made more difficult by the fact that the editor must keep two different audiences in mind. A sizable minority of the publications (called "combinations") are addressed not only to employees, but to outside groups as well—dealers, stockholders, customers and prospects, community leaders.

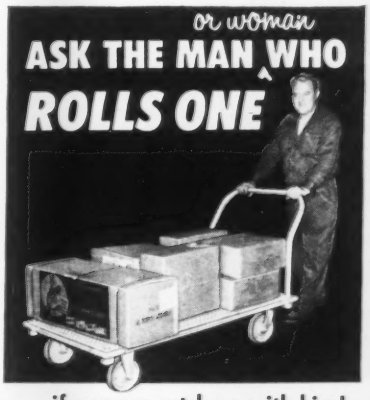
Among the 192 companies surveyed, 132 published straight internals five years ago and do so today, while 44 have stuck to the combination audience all along. Of the remaining 16, nine have shifted from internals to combinations; seven have made a change, or a series of changes, that resulted in at least one publication edited exclusively for employees.

A combination publication that covers outside readers as well as employees has, of course, the apparent advantage of providing more mileage for the house organ dollar. Once an issue is on the press, the print run can be increased at relatively little extra cost.

But it is questionable whether customers and prospects will be interested if the magazine carries a great deal of information on employee benefit plans, safety achievements, inter-departmental sales standings, service anniversaries, and all the varied "inside information" so important to the editor and the reader of the exclusively internal publication. And if these stories are excluded, the employees may lose interest in the magazine.

Wilfred Tallman, for many years

"Look, lady, we'll flip for it. Heads, you get the seat. Tails, you stop glaring at me."



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an industrial publications editor for the Texas Company and former president of the American Association of Industrial Editors, wrote in *The Editor's Notebook:*

> The company magazine is just trying to make better friends of those it already has, and *that is its mission* . . . Now suppose the company has an employee magazine that tries to carry the company message outside as well as inside and to educate a field larger than its natural audience. By so doing it weakens its primary purpose . . .
>
> The editor who goes outside the company field . . . must realize that he is operating in a highly competitive field. The point of view is different. His readership target is people in general rather than people in particular . . . It is a field where advertising, sales promotion, and public relations are competing for the same readership. He will accordingly put a different angle on his copy . . .
>
> The reader on the other end has only one receiver, and if the message doesn't appeal to his self-interest, he tunes it out. If he opens the company magazine and gets a promotional message meant for some other guy when he had his mind all set for an intramural topic, he may never try again.

Some compromise solutions to this problem were reported in the survey. One company started separate plant newspapers for employees when the company-wide publication "went to a combination." One or two concerns keep the distribution of employee publications exclusively internal except for one special issue a year, which is sent to dealers and prospects. One editor wrote: "Our publication goes to about 100 personnel directors, suppliers and customers, but it is edited for employees." In another case, the publication is sent to stockholders, but only if they request it.

While some companies are attempting to cover a heterogeneous group of readers with one publication, others have narrowed down their fields, and provide specialized house organs for particular groups of employees. Companies were asked: "In addition to your employee publication, does your company have separate specialized house organs or newsletters for supervisors and/or other members of management? For salesmen?" Here are the answers:

For supervisors and/or other management members	*Yes* 105; *No* 77
For salesmen	*Yes* 105; *No* 59

The majority of the publications covered in this survey have increased in size in the last five years, and a big minority have widened their audience. Answers to a survey question on this point divided as follows:

In the last five years has your employee publication grown in:

a. Frequency of publication?	*Yes* 15; *No* 144
b. Average number of pages?	*Yes* 96; *No* 85
c. Coverage of distribution to groups of employees not reached before?	*Yes* 74; *No* 105

As business communications develop, it is evident that many companies are placing added emphasis on their employee publications.

THIS IS THE AGE OF THE MANAGER . . .

• • • He was created out of the necessity of the Industrial Revolution, which introduced the machine and mass production, and with it the need for mass distribution. The corporation is essentially a creation of industrial management, a means of obtaining the continuity of action that no individual could guarantee. The corporation has a group conscience, which is reflected in the responsibility placed on management and in its decisions.

The facets of management are many, and the complexity of management increases with the speed of communication and the rapid improvements in technology. Yet no innovation or technique can remove or lessen the human factor in management decisions. Management can deal arbitrarily with machines and methods, using precision gages of performance. It must deal with people on a basis of human values tempered by a knowledge of the variables of human intelligence and wants.

Modern management is the art of analysis, appraisal, selection, and delegation. The poor manager attempts to make all the decisions. The good manager distributes the responsibility and shares in it, and measures his success by the quality of his subordinates' decisions. He may excuse an occasional error in action, but never errors of omission. He expects a certain percentage of mistakes from the line staff below him. The man with a perfect score is ducking difficult decisions.—A. M. S.

Cornell digs out some facts about those who retire

DESPITE a popular belief that people's health suffers when they retire, a long-span survey under way at Cornell University shows little difference in what happens to the health status of those who retire at 65 and of those who stay on the job.

The Study of Occupational Retirement conducted by Cornell's Department of Sociology, and Anthropology, like previous studies, has shown that the retired are less healthy than those continuing at work, but the Cornell group had the advantage of pre-retirement as well as post-retirement medical examinations of many of the people it is keeping track of.

The examinations reveal that those who retired were in poorer health than the others, before their retirement, and the proportion whose health worsens, improves, or remains the same is remarkably alike in both groups.

Thus, of those whose health was good at the first examination, 25 per cent who had meanwhile retired showed poorer health at the second examination; but so did 22 per cent who had not retired. And of those with poor health at the first examination, 36 per cent who retired were in better health at the second checkup; 37 per cent who had not retired also showed improvement.

The Study of Occupational Retirement has turned up some other interesting preliminary findings:

1. Retirement at 65 is not common, except under "compulsory retirement programs" in private indus-

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try. Sixty-two per cent of participants who responded to a mail inquiry were still working at their original jobs past the age of 65, and another 6 per cent had found other employment after being "retired." The rates of retirement, by groups, were: private industry, 55 per cent; educators, 17 per cent; public employees, 15 per cent; ministers, 8 per cent; self-employed physicians, 5 per cent.

2. Of those who did retire, 68 per cent did so because of organizational policy, and more than half of these had a favorable attitude towards retirement. Of those who voluntarily retired, nearly three quarters had this favorable attitude.

Private Pensions Favored

3. As might be expected, those in poor health are more frequently favorable towards retirement. So are those who anticipate an adequate income—but current economic status does not seem to affect the desire to retire. And, oddly, those expecting only a pension are more in favor of retirement than those expecting a pension in combination with OASI payments, or OASI payments alone.

4. Of most interest to employers, perhaps, is the fact that those who value the work they do and like their jobs are most unfavorable to retirement, and are least likely to be satisfied in retirement. Thus the most satisfied workers are apt to be the most dissatisfied retirants.

5. One other factor that appears to affect attitude towards retirement—and, presumably, satisfaction with it afterwards—is the extent to which retirement has been planned in advance. Cornell's respondents apparently get little from company preretirement counselling, however. Of 335 reported by the companies to have had such counselling, only 10 per cent said their employers had done anything to prepare them for retirement— aside from providing a pension, of course.

As Content Either Way

6. Measures devised by the study group to indicate degrees of dejection, satisfaction with life, hopelessness, and the like, showed no significant differences between those retired and those working past 65.

7. Inadequacy of income after retirement is a major factor in whether the retirant feels adjusted to his new

situation. Those taking in $150 a month or less felt a sense of "economic deprivation," regardless of what their pre-retirement attitudes had been. Over the $150 line, post-retirement attitude appeared to correspond closely to pre-retirement attitude.

The university group expects to find some changes in the effects of retirement upon its correspondents as time passes. Already there is an indication that those most favorable to retirement before they begin it become less satisfied as time goes on; those least favorable to the idea in advance become more satisfied.

The Cornell Department of Sociology and Anthropology suggests this may be a tipoff to management and others trying to prepare older employees for retirement: Give them a true picture of retirement and perhaps the problems of readjustment will be minimized. False hopes and fantastic fears should both be prevented as much as is possible.

Gordon F. Streib is director of the Study, headquarters for which are in the University's Morrill Hall.

Factory recruits found in women's clubs

Job applicants are hard to find, not only for office jobs, but also for factory jobs in many suburban communities. But a New York advertising man, Howard Kramer, has come up with a completely new source of female help for simple factory jobs: women's clubs that are trying to raise funds for some charitable purpose.

For nearly four months, some eight to fifteen housewives, members of the Teaneck, N.J., Women's American ORT, have been punching in at 8 AM every workday at the Kings Electronics Company at Tuckahoe, N.Y., and putting in a full day's work at simple assembling and packaging processes.

They receive no pay themselves, but their earnings—at union scale—go to their organization, which supports Overseas Rehabilitation Training of refugees. Kramer sold labor-short Morton Weissman, president of Kings Electronics Company, on the idea last November, and the initial tryout was satisfactory enough that the program has been kept up.

The women received regular wages during their comparatively brief on-the-job training period, and

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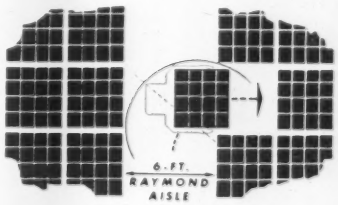

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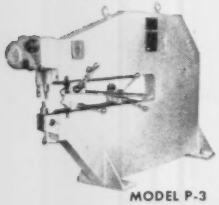
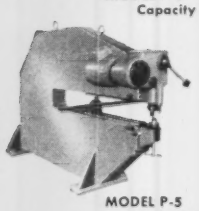
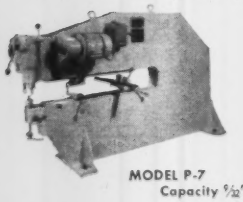


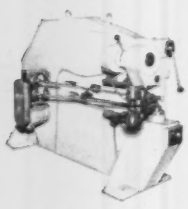
MODEL P-3
Capacity 5/32"



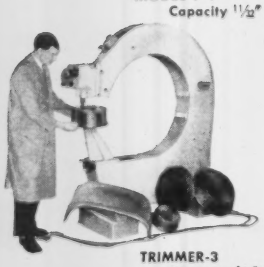
MODEL P-5
Capacity 7/32"



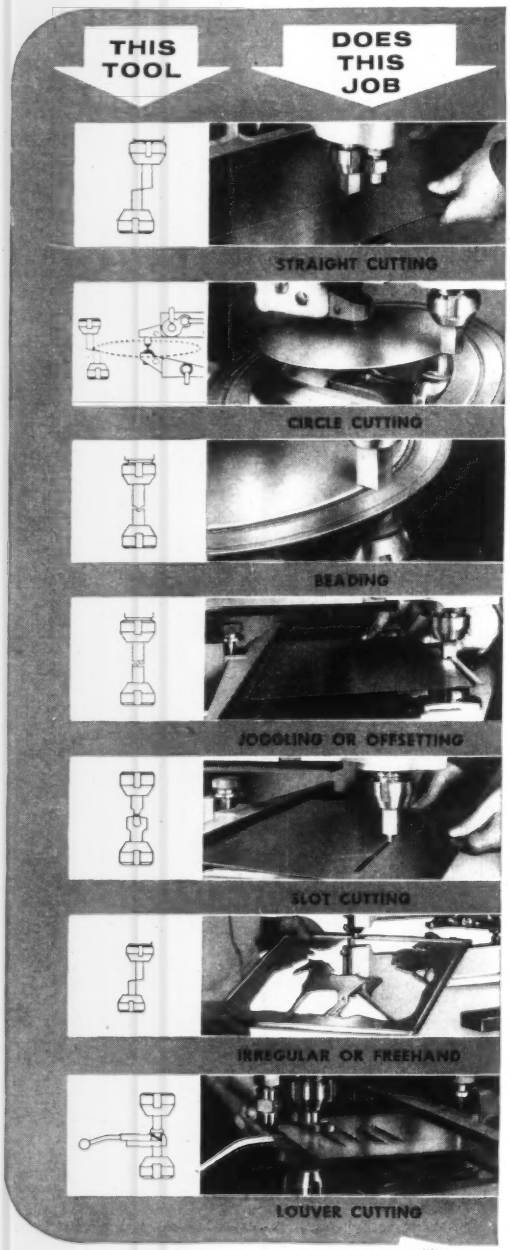
MODEL P-7
Capacity 9/32"



MODEL P-9
Capacity 11/32"



TRIMMER-3
Capacity 5/32"



Write for this FREE booklet on Money Saving Metal Working ideas

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the scheme was inaugurated with the blessing of the plant production union, Local 475, Brotherhood of Electrical Workers, AFL-CIO.

Kramer, dubbing his program "Volunteers for Industry," presently is negotiating for a similar arrangement between some New York City banks and women's church groups in that city. Here women with premarital or other past office experience will be able to take on more skilled jobs, he believes.

Wooing and winning the office employee

"The salaried employee today is being wooed by both unions and management," says the National Assn. of Manufacturers in the introduction to a new booklet. "This contest for his support will be won by the one which recognizes the real needs and desires of the salaried group and provides the answers which will bring satisfaction. The outcome of this contest may very well rest on management's action at this critical juncture."

The 64-page booklet, "Satisfying the Salaried Employee," is a concise, what-to-do-and-how-to-do-it manual, covering status and recognition, compensation, communication, and supervision, with a bibliography on each subject.

Supplying answers to many of the questions raised in "Spotlight on the Office Worker" (DR&MI, April 1957), the booklet is 50 cents: Industrial Relations Division, NAM, 2 East 48th Street, New York 17, N.Y.

Recreation can be educational, too

Every employee isn't bowling-mad or picnic-crazy, as many an industrial recreation director has found out, and some managements are going out of their way to find activities they can sponsor for the employees who only yawn at a ball game.

One of the newest—the company thinks it's an industrial "first"—was a seminar on "The Evolution of Movies as Art and Entertainment," offered by Chrysler Corporation last spring for any of its employees who wanted to attend.

The series was not as dry as it may sound. It consisted of movies, in one case dating back to 1893, in many to the first decade of this century, in-

cluding the 1902 French "A Trip to the Moon" and the 1903 American "The Great Train Robbery," first movie with a plot. Others were famous films of the 1920's and early 1930's, all on loan from New York's Museum of Modern Art.

Participants in the program received brief notes on the historical significance of each film and other explanatory material was presented by W. J. Hampton, formerly of the University of Michigan, who has since been on Chrysler's organization staff.

Attendance this spring, when the programs were not publicized beyond the company's general offices, was about 50 Chrysler employees and their guests, according to Carl Mathews, supervisor of employee services at the general offices.

Next fall a new series will be started, with choice still to be made between a demonstration of 40 years of movie comedy, from old Chaplin one-reelers to the present; the evolution of documentary films; or the use of films as instruments of propaganda, as by the nationalized Nazi film industry.

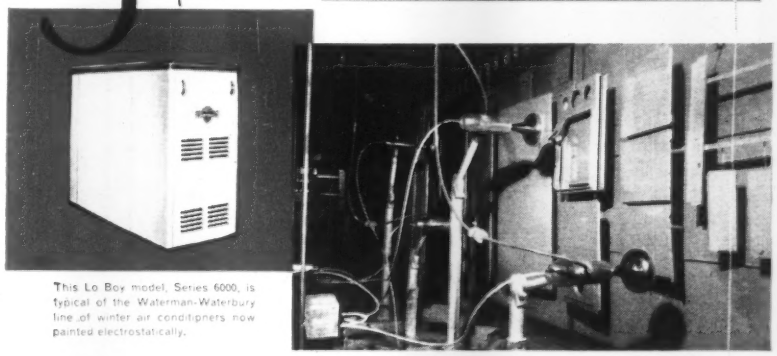
Electronic timekeeper saves time, space

An electronic timekeeping system developed in General Electric Company's Metallurgical Products Department plant in Detroit saves 1,000 square feet of factory floor space, frees 11 out of 18 former timekeepers for other jobs, and cuts down sharply on waste walking, talking and waiting on the part of production employees.

Where previously a worker had to walk to the desk of one of the human timekeepers, scattered through the plant's buildings but not always nearby—and then might have to wait while other men checked in jobs ahead of him—now he has only to go to a handy call box and report his presence, clock number, job and operation number. No work station is more than 60 feet from a call box, and a smaller centralized timekeeping staff transfers automatically-recorded calls to punch cards which tie in with a machine accounting system.

Installed a year ago, the system has paid for itself three times over, according to the man who devised it, and is saving $36,000 a year.

3 times as many Furnace Casings per gallon of paint with RANSBURG NO. 2 PROCESS!



This Lo Boy model, Series 6000, is typical of the Waterman-Waterbury line of winter air conditioners now painted electrostatically.

Quality of work is improved; Labor costs are cut and Production Stepped up 150% with

RANSBURG Electrostatic Spray Painting

Results exceeded expectations when Waterman-Waterbury, Minneapolis, modernized their finishing department and went from hand spray to Ransburg No. 2 Process in painting their quality line of heating and air conditioning equipment.

By the former hand spray method, W-W used a half gallon of paint to coat a single casing. Now, with Ransburg No. 2, they get SIX CASINGS PER GALLON . . . or 3 times as many per gallon. Furnace casings, as well as other painted parts which go into the famous Waterbury Furnaces, now get a uniform coating of .8-mil.

Production was increased, too, as automatic painting enabled them to step up the conveyor speed from 7 fpm to 11½ fpm. Where they formerly turned out a complete furnace in five minutes, NOW they assemble three in just six minutes . . . an increase of 150%. All in all, they figure the modernization program—with Electro-Coating—saved over $11,000 in the first three months of operation.

NO REASON WHY YOU CAN'T DO IT TOO!

Whatever you paint, we'd like to tell you more about the efficiencies and worthwhile savings which can be yours with Ransburg Electro-Coating Processes. Get our No. 2 Process brochure which cites many on-the-job examples of electrostatic spray painting on a wide variety of products. Or, we'll be happy to loan you our new film, "The Big Attraction" which tells the electrostatic spray painting story in sound and full color.

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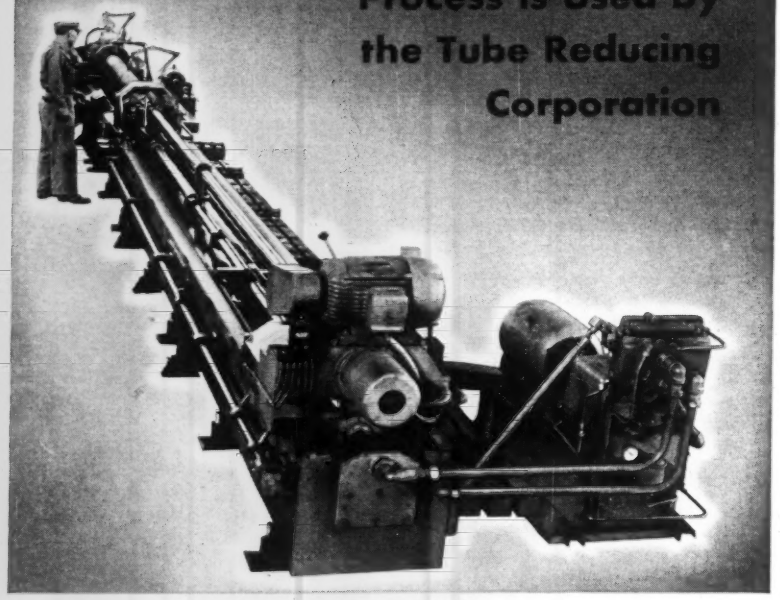
Electro-Coating Corp.
Barth and Sanders, Indianapolis 7, Indiana

Why MICROHONING Process is Used by the Tube Reducing Corporation



The carbon steel, stainless steel, alloy steel and non-ferrous tubes manufactured by the Tube Reducing Corporation are used on applications that require high strength, uniform wall thickness and surfaces free of pits, scratches or other imperfections.

In processing its tubes, Tube Reducing uses Microhoning, either to prepare the tubing for its exclusive "Rockrite" process, or to generate functional characteristics in finished tubing.

As a preparatory operation—which produces a round, straight bore and a clean-cut, cross-hatch surface pattern—Microhoning helps to improve the results of "Rockriting." The Microhoned surface slides easily over the "rocking" mandrel and compresses to a smooth, flaw-free surface that passes the most rigid inspection and tests.

Other "Rockrite" tubes, used in such applications as hydraulic cylinders, are Microhoned after "rocking" to generate final bore size and geometric accuracy.

The principles and application of Microhoning are explained in a 30-minute, 16mm, sound movie, "Progress in Precision"... available at your request.

☐ Please send me "Progress in Precision" in time for showing on _____(date).
☐ Please have a Micromatic Field Engineer call.
☐ Please send Microhoning literature and case histories.

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MICROMATIC HONE CORP.
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DYNAMIC BUDGETING

continued from page 62

Nor is it necessary to apply this control to *all* accounts of all departments, though that may be done. At first, the procedure might be used for critical accounts in critical departments—especially the areas where expenses have been too high or where dollar costs bulk large. In The O. A. Sutton Corporation, we apply the preventive budgetary control to these accounts, which represent the bulk of our indirect expenses: supervisory salaries, indirect labor, operating supplies, perishable tools, maintenance expense. Capital expenses are checked off against the capital budget or appropriation.

There are occasions, of course, when expenditures must be made even if they send a department over its budget. But these cases are rare, and usually cannot occur without special approval from a higher echelon. When the vice president for manufacturing must approve a requisition, the foreman will ordinarily avoid sending it in if he can.

This, however, does not completely solve the problem of making information available before it is too late to do anything about it, since the "commitments" subtracted from the budget to calculate the available balance will also vary. In most small- and medium-sized companies, budget performance on total expenses is reported only once a month, which is generally not adequate for proper control.

A simple plan to provide more frequent expense information to all the department managers could make provision for these three steps:

1. Provision of cumulative month-to-date expenses, by account, by department, each week.
2. Provision of the detail of actual charges supporting each account total.
3. Computation of the *total* department budget to date (not by account) as a guide to over-all condition.

The ultimate, of course, would be computation (electronic) of budget and actual by account.

To achieve the weekly expense control on a practical basis, certain procedures have been found necessary:

1. Paper work should be processed continually, much as a production line flows. For example, invoices can't

be held in the accounts payable department until near month end. Nor should expense requisitions be held in the cost department. This we might call "flow accounting."

2. Estimates may be used on occasion. Thus, if payrolls are written only every two weeks, then every alternate week may contain estimated expenses (based on a head count). These estimates are removed in the following week.

3. Fixed expenses, such as depreciation, may be included in the first weekly expense summary in total for the month, with a corresponding adjustment of the budget base.

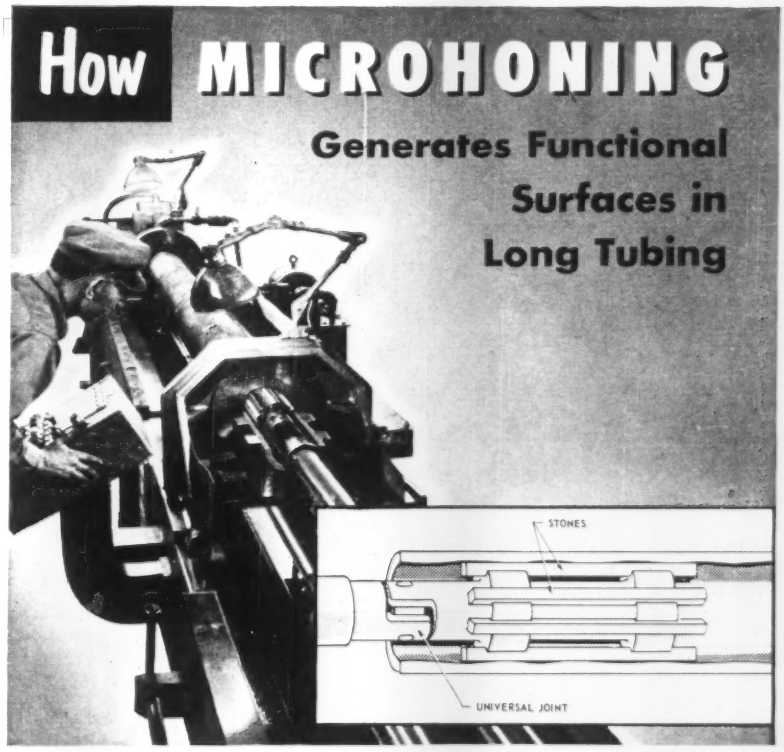
THE AUTHOR • Before joining O. A. Sutton, James D. Willson served as treasurer of Affiliated Gas Equipment, Inc. (later merged with Carrier), as assistant treasurer of the Brown Company, as controller of the Plaskon Division of Libby-Owens-Ford Glass Company, and as controller of the Stinson Division of Consolidated Vultee Corporation. He is co-author of two books: *Controllership, The Work of the Accounting Executive*, and *Business Budgeting and Control*.

Generally, good common sense should dictate the methods and the short-cuts that may be taken. All we need to do is apply a little imagination.

Flexible Budgets

It is accepted practice in the direct labor field to compare actual and standard hours for the production level. Also, actual direct material used is compared with standard at the production level attained. But for some strange reason, many companies measure actual expenses against a predetermined figure that takes no account of the level of activity. Thus an expense budget may be calculated at an assumed level of 22,000 manhours, and actual experience for the month may be 15,000 hours. The example on page 130 indicates how meaningless the budget becomes in consequence. Or there may be Saturday overtime, and the foreman, who is supposedly responsible for the budget, may have no control of it; yet no adjustment in the budget is made in consequence.

As for changes in product mix, these can be provided for by converting planned production to a common denominator—standard labor



Microhoning is used by the Tube Reducing Corporation in processing many types of tubing that range up to 18 feet long and 9½ inches in diameter. The tubes are Microhoned on a horizontal Hydrohoner equipped with a hydraulic clamping fixture that is easily adjusted to handle tubes of various sizes.

Microhoning tools have long abrasive sticks which cannot follow irregularities in the bore. The abrasive action removes high spots while generating required surface characteristics and accurate geometry. A universal joint, connecting the tool body to the drive shaft, eliminates any tendency of abrasive action to change the bore location.

Typical processing of "Rockrite" tubes: To remove scale and deep scratches . . . hot rolled, pierced billets are first bored. Then, the bores are Microhoned—stock removal rate is .015 inch from a 4½-inch diameter x 128-inch length in less than 30 minutes. The Microhoning operation generates accurate, round, straight surfaces with the required finishes of 20 to 30 microinches r. m. s.

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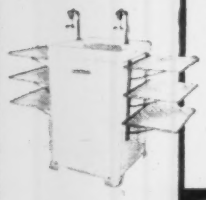

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UNDER OR OVER— HOW TO TELL THE DIFFERENCE

How the wrong type of budgeting can mislead is shown by the case of Department X, which was either $7,500 under its budget or $3,000 over—depending on the type (not size) of budget used.

Department X has a salary expense of $600 per month, regardless of production level, but expenditures for operating supplies quite naturally vary with output, averaging $1 per manhour. Maintenance expense runs $300 at the minimum, plus 50 cents per standard manhour.

When the budget was drawn up, plans called for 22,000 manhours, and the expense budget (really a projection) was drawn up this way:

Salaries	$ 600
Operating supplies (22,000 x $1)	22,000
Maintenance	11,300
Fixed	300
Variable (22,000 x .50)	11,000
TOTAL	$33,900

But only 15,000 manhours were worked during the month, and the company—like a good many others—took no account of volume changes in its budgeting. So performance against budget looked like this:

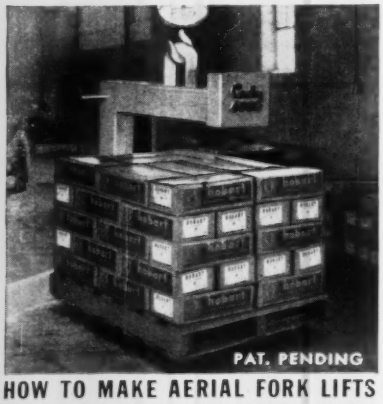
	Actual	Budget Projection	Over (or under) Budget
Salaries	$ 600	600	—
Supplies	17,000	22,000	(5,000)
Maintenance	8,800	11,300	(2,500)
	26,400	33,900	(7,500)

By such a measuring stick, the cost performance looks good. But measured against a more logical variable budget that takes account of the level of activity, the picture would be:

	Actual	Flexible Budget	Over (or under) Budget
Salaries	$ 600	600	—
Supplies (15,000 x $1)	17,000	15,000	2,000
Maintenance ($300 plus .50 x 15,000)	8,800	7,800	1,000
TOTALS	$26,400	23,400	3,000

hours, for example, pounds of product, or machine hours. Whatever the unit of measure, it should be expressive of all products and be the primary factor in expense levels.

By and large, all costs are subject to some degree of control. Therefore, why stop with, let us say, manufacturing expenses? Engineering expenses, research and development expenses, distribution costs, general and administrative expenses — all these are proper areas for intelligent budgetary control. The problems are more difficult, and emphasis may be changed for various types of costs. In budgetary control of engineering expense, for example, it may be necessary to allocate or budget manhours on a project basis. Further, the real



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control, aside from keeping expenses within budget—an appropriation type—would be a periodic review of the planned projects to see that the progress and probable gain from each is worth the expected cost. A similar approach may be found useful in the intelligent control of research and development expense, market research expense, or advertising expense. In general, all types of costs or income should be budgeted.

Finally, we come to the matter of motivation and stimulation in connection with a budgetary program. Because a budget is, among other things, a device to control costs through *people*, the human relations phase must be given more emphasis. We might even say that the human phase of budgetary control is as important as the technical phase. Getting budgets to work is a selling job, just as much so as selling your product. Too often budgets are resented because they are considered pressure tools. The trick is to sell the budget as a challenge, as a means by which competence may be demonstrated.

Selling the Budget

In considering the human aspects of budgeting, these points indicate the approach to be taken—an approach that does not relegate the budget program to the corner shelf:

1. The budget must have the full strength of the executive force behind it. All executives, major and minor, must know that the chief executive insists on the investigation, study, and decisions necessary to establish sound plans and make them work.

2. The lines of communication must be open from the top executive down to the lowest echelon. Too often plans are well conceived in the executive committee meeting, but those who must execute simply don't know what is expected. Nothing so restrains the enthusiasm and energy of an organization as uncertainty.

3. *Cooperation* should be the keyword in *establishing* the budgets. The budget manager should avoid technical accounting jargon in helping the foremen and department managers establish their budgets. The budget should be viewed as the budget of the supervisor who will have the duty of controlling the costs—not an accounting budget, not something stuffed down the throat of the supervisor by a budget manager.

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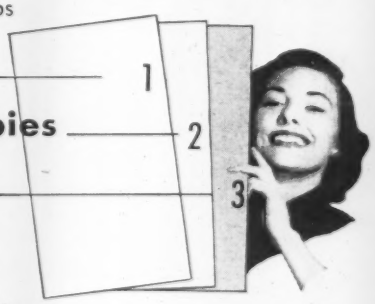

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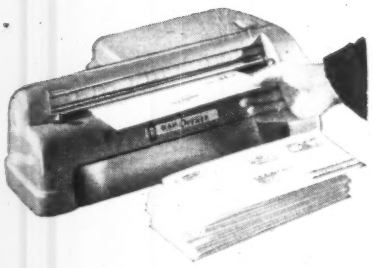

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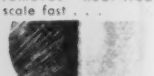

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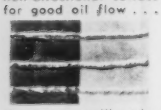

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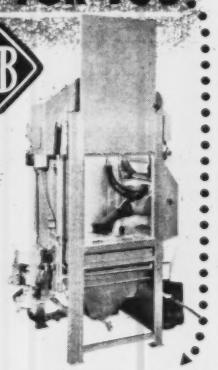

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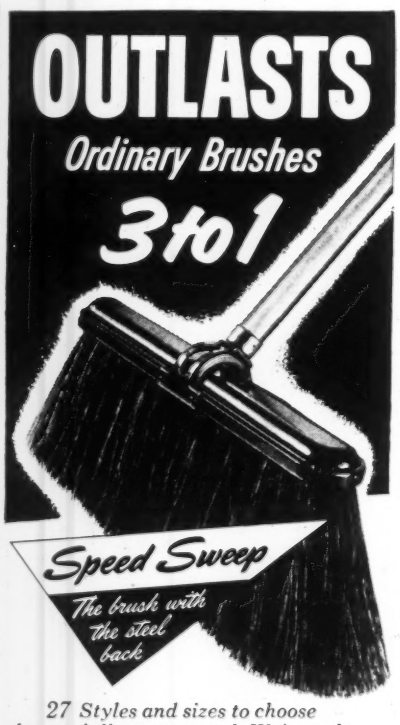

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MD MILWAUKEE DUSTLESS BRUSH CO.
530 N. 22nd St., Milwaukee 3, Wis.

4. *Cooperation* should be the keyword in reviewing actual *performance*. By and large, department managers and foremen take pride in the efficient operation of their departments. They usually want to do a good job, and will accept reasonable help. Therefore, in analyzing actual results, teamwork is needed.

5. Budget reports should be presented in a simple fashion and in such a way as to emphasize the important points and get the message to the man on the firing line.

This is an area where a little thought may be most rewarding. For example, a short narrative at the bottom of the report, in layman's language, about the managers' performance could be helpful. Or, unimportant accounts might be combined to avoid the appearance of a vast amount of detail. The report should, of course, isolate the expenses that are important dollar-wise and that mean something to the reader. Too, if the department supervisor's name is put on the report, it might get better reception. Always we should keep in mind the viewpoint of the man who is to take corrective action. Let's try to make it *his* report.

By and large, a little imagination, a little common sense, a little technical knowledge, and a little of the right kind of human engineering will go a long way in making your budget program really effective.

GETTING AHEAD

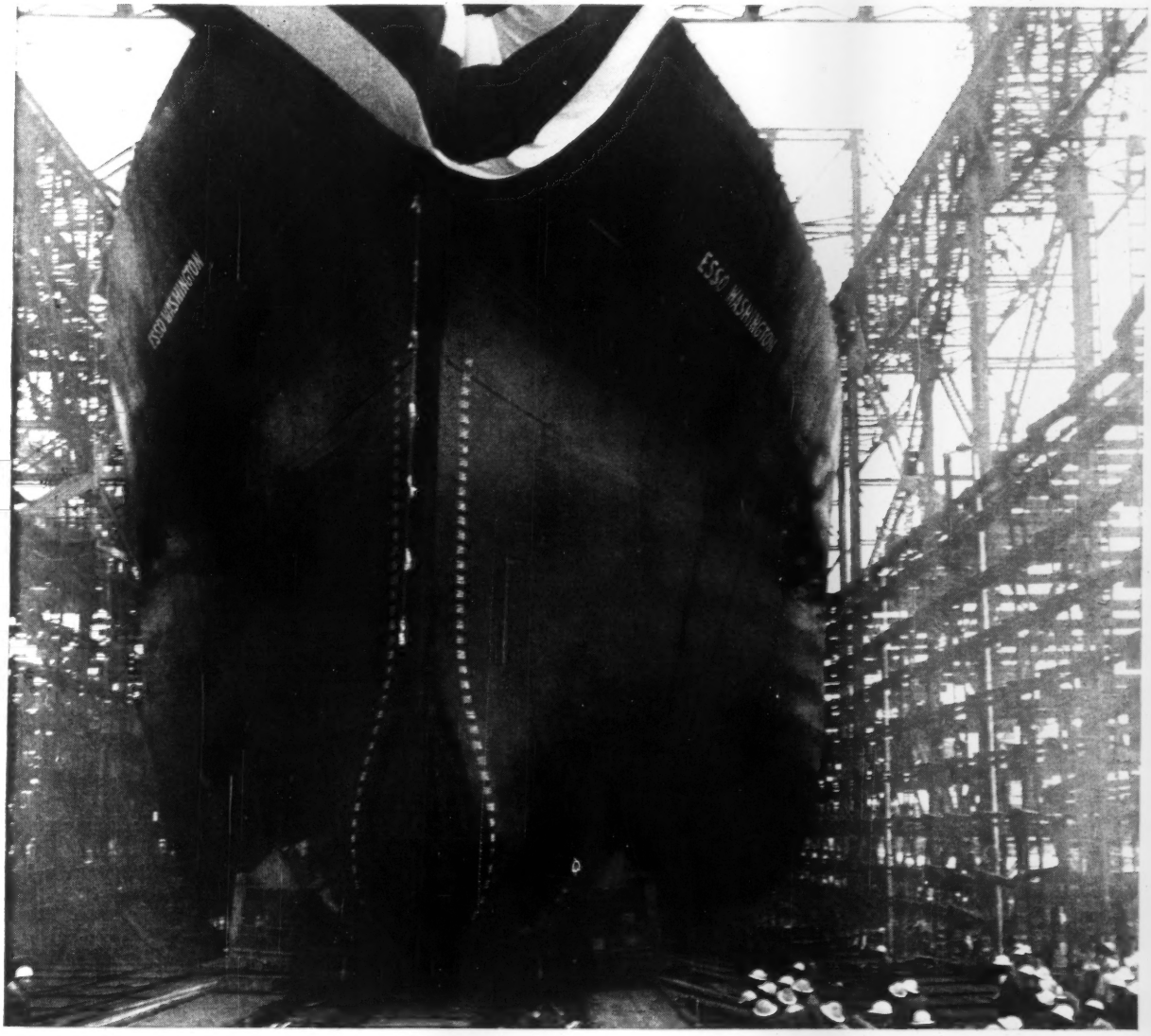
According to the president of the Fred Astaire Dance Studio chain, "Business men and executives are becoming increasingly aware that dancing and the poise and confidence it develops helps men get ahead."—*News item.*

Business men, mere grown-up boys,
Have need of confidence and poise
When dealing with a none-too-pliant
Competitor, employer, client.
And so, though rather late in life,
And prodded by a lightfoot wife,
They take the step, they pay the toll,
And try their luck at rock 'n' roll.

What if their knees are less than supple?
What if their hips fail to uncouple?
What if they find, upon the floor,
That folks don't two-step any more?

They're gaining confidence. At least,
Their confidence will have increased
If they stick through the course and suffer
Until their ego's healed, and tougher.

—RICHARD ARMOUR



13 MILLION GALLONS BIG...BUT JUST A DROP IN THE BUCKET

The ESSO WASHINGTON is the newest of the 110 ocean-going tankers in the Esso fleets. She can carry 13 million gallons of oil. But that's just a drop in the bucket compared with the 40 billion gallons that Jersey Standard affiliates delivered to customers last year.

As economies expand . . . as populations grow . . . as people live better, oil must provide more energy to power factories, to drive ships and planes and motor vehicles, to heat and light homes and offices. Last year we supplied more than twice the oil we did ten years ago. This year our customers will need still more.

It's a big job . . . and it requires vast amounts of costly equipment. As our Annual Report points out, we spent $1,083,000,000 last year searching for oil and gas and paying for such things as tankers, pipelines and refineries. And in 1957, we plan to spend another $1,250,000,000 to find, produce and deliver the oil people will be needing tomorrow...and ten and twenty years from now.

Because Jersey Standard is willing and able to make such investments and because our operations are efficient, we make a profit. In 1956 it was $808,535,000. About half of it went back into the business to help pay for the new facilities.

Our successful year was good news for the 403,000 shareholders who own the company . . . they got dividends of $2.10 per share on the money they invested.

It was good news for our 156,000 employees . . . whose wages and benefits came to $906,000,000.

It was good news for governments. Operating and income taxes, import duties, consumer taxes and other payments from our operations brought to the United States and other governments a record $2,171,000,000. That was five times the dividends to shareholders, more than double the payroll and benefits to employees.

Best of all, our operations were good news for the people of the free world, who rely heavily on the energy of oil for their economic and social progress.

In this, our 75th anniversary year, we intend to continue our efforts to remain successful, profitable and growing, in order to serve people well.

If you would like a copy of our 1956 Annual Report, write us at Room 1626, 30 Rockefeller Plaza, New York 20, N. Y.

Esso 75 YEARS

STANDARD OIL COMPANY (NEW JERSEY)
AND AFFILIATED COMPANIES

producing energy for an abundant life

DUN'S REVIEW and MODERN INDUSTRY announces

The Presidents' Panel

PRESIDENTS of 110 companies, representing many of America's biggest, basic industries—including food, clothing, chemicals, communications, utilities, drugs, steel, aircraft, rubber, paper, glass, tobacco, industrial equipment and machinery—have agreed to contribute their views on major business and management problems every other month, beginning with the July 1957 issue.

The Panel will be a unique sounding board for executive thinking on significant management problems, as well as the personal interests, careers, and goals of top management.

The initial Panel will be a profile-in-depth of the members—their age, education, span of control, average working hours per week, the primary avenue they traveled to reach the top position in their companies. They will also air their views on industrial expansion during the next decade, the prospects for prosperity and peace, as well as on the human qualities they believe are most essential to the top executive.

The corporations over which these 110 leaders of industry preside represent total assets of more than $27 billion, an aggregate tangible net worth of nearly $15 billion, and annual net sales topping $32 billion. These 110 men are responsible for the economic security of about 1.7 million employees—averaging approximately 15,715 employees per participating company. The industrial companies have a range of from one to 173 plants—and all companies together operate nearly 1,800 plants across the nation.

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Executive BOOKSHELF

Looking at MR

THE HIDDEN PERSUADERS *by Vance Packard. David McKay Company, Inc., 55 Fifth Ave., New York, 275 pages, $4.*

To those who have been following marketing trends in recent years, much of this book will be familiar—the parts dealing with motivation research techniques and their application. To many of the general public, however, it may come as a surprise that one of the main reasons for buying an air conditioner is the need for emotional security and that Christmas cards carry sexual symbols even the amateur psychologist can spot at a glance. (That the automobile is an outlet for aggression cannot be news to anyone who has ever been a pedestrian.)

The MR techniques, which enable the advertiser to sell a product not for a specific purpose but in answer to the consumer's hidden emotional needs, disturb Mr. Packard because he believes they invade the privacy of the mind, and open the door to widespread manipulation of the general public. He is concerned less with the validity of the MR techniques—though he does touch on that question—than with their morality. And reading of some of the gyrations of the ad-men who have been let loose with psychological findings is actually a bit frightening, particularly the chapter on the appeals to children.

But it is doubtful whether much alarm is justified even if the techniques have all the validity their most ardent supporters claim for them. If every advertiser adopts them, the public will soon learn to spot the hand of the manipulator, and books like this will make the detection easier.

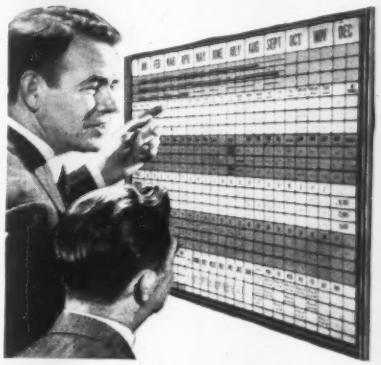
Success story

THE MERCHANT OF PRATO: FRANCESCO DI MARCO DATINI 1335–1410 *by Iris Origo. Alfred A. Knopf, 501 Madison Ave., New York, 422 pages, $7.50.*

The poor boy who makes a fortune is generally thought of as a phenomenon of the 19th and 20th centuries. Francesco di Marco Datini turned the trick in the 14th century and, de-

Fourteenth century drawings indicate that if it was important to keep barrels in good condition, the merchant also found it necessary to test the wine that went into those barrels.

You Get Things Done With Boardmaster Visual Control



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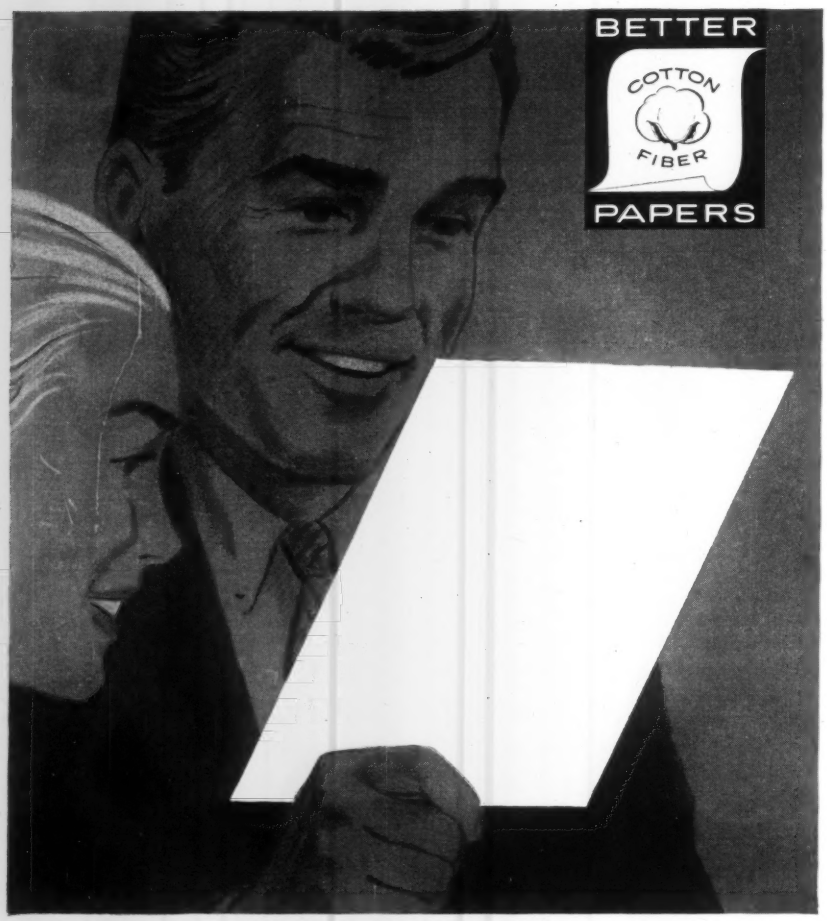


Yes, "BETTER PAPERS ARE MADE WITH COTTON FIBER" And WESTON BOND proves it

Because it is made better with *cotton* fiber, WESTON BOND has all the beauty of finish, all the impressiveness and character you look for in a letterhead paper.

Against the sparkling brightness and uniform texture of WESTON BOND, typing looks neater, cleaner . . . letters look more inviting, easier to read. See for yourself the difference cotton fiber can make. Ask your printer to use WESTON BOND on your next lot of letterheads.

WESTON BOND is available through your favorite printer in white, colors, white opaque, white litho finish and envelopes to match with instant sealing flap gum. Write for a sample book. Address Dept. DR.

WESTON PAPERS · PROTECT YOUR RECORDS ·

BYRON WESTON COMPANY

Makers of Papers for Business Records Since 1863

DALTON, MASSACHUSETTS

WESTON BOND

Cotton Fiber Quality Letterhead Paper

spite a good deal of conspicuous consumption during his lifetime, was able—like some modern business men—to leave a large fortune to a foundation. He also left a good deal of historical source material, since he kept all his letters and accounts. This book, a biography of Datini, and a fascinating account of the business and social life of the day, is based on those documents.

How Datini first raised capital to start his career as a merchant and trader is not clear. According to one story, he started like Dick Whittington by providing a cat for a mouse-molested king, but this is believed to be a legend. At any rate, he did succeed in getting ahead, and was firmly established well before he reached the age of 30.

Profits in those days were high: When Datini and a partner invested 800 florins in a shop, they got back half their capital in dividends in less than six months. But the risks were high also; and the tax collectors harassed the wealthy merchants, even demanding a look at the books on occasion. In addition, Datini worked harder than he needed to because he never learned how to delegate. "You injure yourself greatly," one of his partners wrote to him, "forasmuch you would keep all matters in your own hands."

Datini was, in fact, a prime candidate for ulcers or an early coronary; and if he lived to old age, it was by virtue of a strong constitution and without much peace of mind. "Destiny has ordained," he once wrote, "that from the day of my birth I should never know a whole happy day."

Machines and men

AUTOMATION: ITS PURPOSE AND FUTURE *by Magnus Pyke. Philosophical Library, Inc., 15 East 40th St., New York, 191 pages, $10.*

THE ECONOMIC CONSEQUENCES OF AUTOMATION *by Paul Einzig. W. W. Norton & Company, Inc., 55 Fifth Ave., New York, 252 pages, $3.95.*

Except for the final chapter, Dr. Pyke's book is concerned mainly with the status of automation at present: in chemical processing, in engineering, in accounting, and other fields. Dr. Einzig considers such questions as the effect of automation on business cycles, wage policy, prices, and capital requirements.

Dr. Pyke's conclusion is that shorter hours are the main answer to any economic problems automation may give rise to.

Dr. Einzig also advocates a curtailment of working hours, but, more cautiously, he says the danger is that it may come prematurely or that the curtailment may be too great. He also believes that unions should abstain from demanding excessive wage increases, and "take a less uncompromising attitude toward profits" to encourage investment in automated equipment. On the other hand, he thinks that employers should be willing to relinquish a large proportion of the benefits of automation through price reductions and moderate wage increases, and consider the GAW as a solution to the problem of displaced workers. His conclusion: "Given sufficient patience and understanding for each other's point of view, our generation stands a good chance to see the day when there will be enough to satisfy to a reasonable degree everybody's needs. If, however, automation merely increases greed and selfishness, then mankind would have been better off if it had never been invented."

Time and textiles

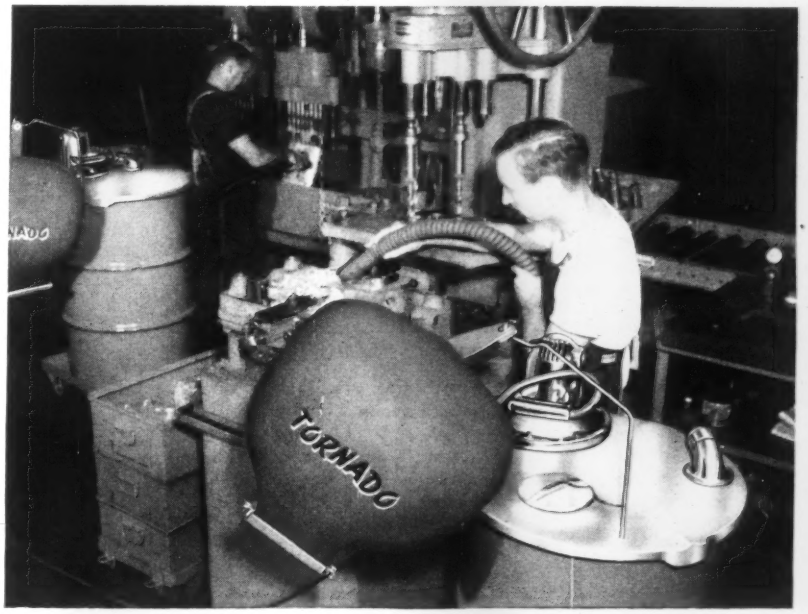
THE WORLD IS CATCHING UP *by Harry Riemer, Fairchild Publications, Inc., 7 East 12th St., New York, 638 pages (two volumes), $10.*

In 1955, Mr. Riemer, who is editor of the *Daily News Record*, made a round-the-world trip, studying the textile and apparel industries on four continents. These books contain his diary of the journey, and his documentation of the book's title. "Nationalism, everywhere," he writes, "means more self-dependence . . . One of the first thoughts in nationalism . . . [is] a move for each nation to make its own textiles, to develop its own sewing industry."

Tested tactics

PROXY CONTESTS FOR CORPORATE CONTROL *by Edward Ross Aranow and Herbert A. Einhorn, Columbia University Press, 2960 Broadway, New York, 577 pages, $15.*

Messrs. Aranow and Einhorn are attorneys who have represented both attackers and attacked in proxy battles. They explain impartially the steps management should take to defend itself and the strategy the insurgents can pursue.



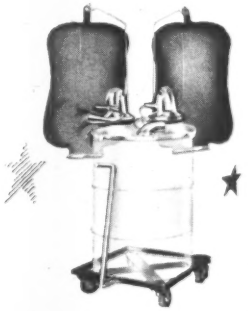
TORNADO PAYS OFF ON THE PRODUCTION LINE AT *AMERICAN BOSCH*

Two Tornado Jumbo Vacuum Cleaners at American Bosch in Springfield, Mass., help keep the production line humming—and by the way, have paid for themselves many times.

In the photo above, you see two Tornado cleaners "gulping" non-ferrous metal chips clear of expensive dies, thus enabling machinists to work uninterrupted and safely. And these chips also have a high reclaim value when sold as scrap.

A Tornado Jumbo Conversion Cleaner could mean speedier production, greater safety and extra profits for your company, too. Why not try it—we know you'll buy it!

JUMBO CONVERSION



If you need greater suction—in addition to larger storage—the Tornado Jumbo Plate which fits all standard 55-gallon drums will deliver, by using two motor units, up to 3 H.P. of suction. Tornado also supplies a 4-wheel dolly with 2 swivel wheels and a pulling handle.

Write for Bulletin No. 758

BREUER ELECTRIC MFG. CO.
5106 North Ravenswood Avenue Chicago 40, Illinois

(ADVERTISEMENT)

SPECIAL REPORTS ON FINISHING NON-FERROUS METALS

NUMBER I—Decorative, Corrosion-Resistant Finishing with Iridite

Chromate conversion coatings are well known and accepted throughout industry as an economical means of providing corrosion protection, a decorative finish or a good paint base for non-ferrous metals. However, continued developments are so rapid and widespread that many manufacturers may not be completely aware of the breadth of application of this type of finish. Hence, this digest of current information; to bring you up to date on the many ways in which you can combine salable appearance with durability in one finish at a competitive price advantage. Report II on paint base, corrosion-resistant finishes and Report III on chemically polished, corrosion-resistant finishes are available on request.

First, as a basis for this discussion, a "decorative" finish is considered as any chromate film that is used as a final finish in itself. It may be truly decorative in that its sole purpose is to enhance the beauty of the product. For example, a bright chrome-like finish or a pleasing bronze appearance are among the many effects that can be obtained. It may be functionally decorative in that it reduces reflectivity for camouflage purposes or provides a means of color-coding parts. But, in all cases, the Iridite films protect the metal against corrosive attack.

Iridite finishes are now available for all commercial forms of the more commonly used non-ferrous metals, including zinc, cadmium, aluminum, magnesium, silver, copper, brass and bronze. These films can produce a wide variety of pleasing appearances. The basic colors of the Iridite coatings are grouped below by metals.

ZINC and CADMIUM: Metallic bright, light iridescent, iridescent yellow, bronze, olive drab.

COPPER, BRASS, BRONZE: Metallic bright, yellow.

ALUMINUM ALLOYS: Clear, iridescent yellow, brown.

MAGNESIUM ALLOYS: Light brown, dark brown, black.

SILVER: Metallic bright.

In addition, many films can be modified by bleaching or by dyeing. Among the dye colors available are various shades of red, yellow, green, blue or black.

Depending upon the metal and the Iridite used, corrosion resistance of clear and bright films ranges from mild passivity to as high as 500 hours in salt-spray; on heavier dark films, salt-spray resistance ranges from approximately 100 to 1000 hours.

It is this combination of decorative and corrosion resistant properties that accounts for the widening use of Iridite finishes. For example, Iridites #4-73 and #4-75 (Cast-Zinc-Brite) make possible for the first time, a combination of lustrous chemical polishing of the as-cast surface of zinc die castings and good resistance to corrosion. Further, in many cases, sizeable savings in the cost of buffing and electroplating are realized.

On many steel parts, a simple system of zinc or cadmium plate and bright Iridite is used instead of more costly electroplated finishes to provide a bright, decorative and protective finish with tremendous savings in material, equipment and labor.

In finishing aluminum, where corrosion resistance or paint adherence is the prime consideration, the aircraft industry has all but abandoned the anodizing process in favor of recently developed chromate conversion coatings, among them Iridite #14 and #14-2 (Al-Coat). These formulations and their method of application can be varied to retain the original metallic appearance while providing acceptable corrosion resistance, or to produce a fully colored brown finish that offers exceptional corrosion protection. Again, time and manpower savings are astounding—one company saved at least $15,000 a year on maintenance of racks alone and another $40,000 on materials and labor in only nine months. In addition, of course, hundreds of thousands of dollars are saved by eliminating the need for expenditures for generators, heating equipment and racks.

Iridites are widely approved under both Armed Services and industrial specifications because of performance, low cost and savings of materials and equipment.

In planning or designing, you should consider the many other characteristics of Iridite finishes which may enter into the specific problem. In addition to having decorative and protective functions, these chromate coatings form an excellent base for organic finishes and bonding compounds. They have low electrical resistance. Some can be soldered and welded. The Iridite film itself does not affect the dimensional stability of close tolerance parts.

You can see then, that with the many factors to be considered, selection of the Iridite best suited to your product requires the services of a specialist. That's why Allied maintains a staff of competent Field Engineers—to help you select the Iridite to make your installation most efficient in improving the quality of your product. You'll find your Allied Field Engineer listed under "Plating Supplies" in your classified telephone book. Or, write direct and tell us your problem. Complete literature and data, as well as sample part processing, is available. Allied Research Products, Inc., 4004-06 E. Monument Street, Baltimore 5, Maryland.

WHAT IS IRIDITE®?

Briefly, Iridite is the tradename for a specialized line of chromate conversion finishes. They are generally applied by dip, some by brush or spray, at or near room temperature, with automatic equipment or manual finishing facilities. During application, a chemical reaction occurs that produces a thin (.00002" max.) gel-like, complex chromate film of a non-porous nature on the surface of the metal. This film is an integral part of the metal itself, thus cannot flake, chip or peel. No special equipment, exhaust systems or specially trained personnel are required.

IDEAS FOR CLEANER PRODUCTS, *faster production, better handling*

More spray packs for industry, consumers

The pushbutton, already a symbol of the trend toward convenience and time-saving, is really getting a workout in dispensing industrial and consumer products.

This pushbutton, located atop the aerosol spray package, is now used to dispense everything from mold-release agents to solid-film lubricants, and the list is growing like cornstalks in July.

New propellants and containers make it possible to pack new types of products. Improved value and package designs provide added sales appeal. And aerosol containers, which once had to be discarded when empty, can now be refilled. (The first refillable aerosol—a tiny, purse-size aerosol bottle—is being used by Helene Curtis Industries for its *Spray-Net*.)

With all this activity, it's not surprising to find new suppliers eyeing the aerosol field. Until last year, for instance, there were only two major producers of the fluorine chemicals used in formulating propellants: Du Pont and General Chemical. Now they're being joined by Minnesota Mining, Pennsalt, and Union Carbide.

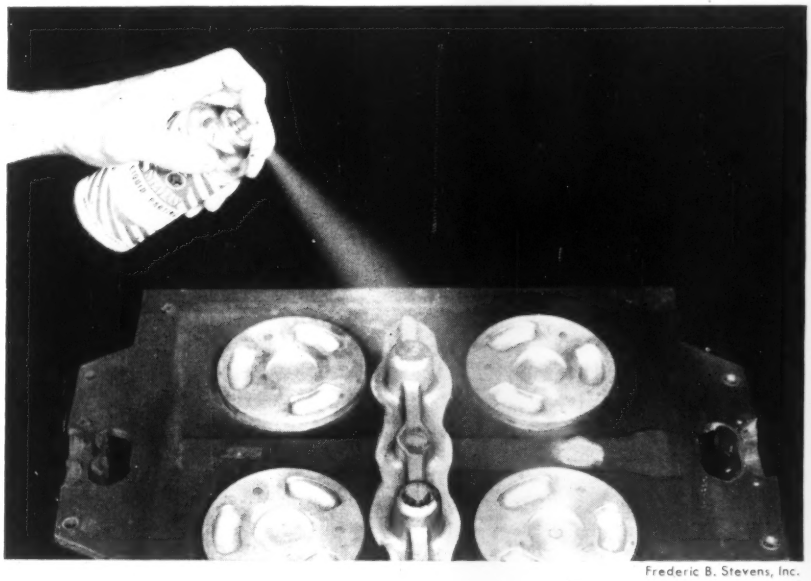
While a relatively small number of consumer products still account for the bulk of aerosol sales, there is plenty of activity in the industrial field. Within the past few months, at least half a dozen industrial spray-lubricants have been introduced, and there are new paints, insulating enamels, and grease-removers.

One particularly interesting new industrial aerosol takes advantage of a property that's sometimes considered a limitation: The cooling or chilling effect obtained with fluorinated propellants. This new product, specially formulated for refrigerating ability, is used to cool off overheated electronic circuits and locate "hot-short" components. It could also prove useful in shrink-fitting and other industrial jobs where a quick freeze is needed.

Controlling creep

At high temperatures and pressures—as in jet engines—metal creep becomes a serious problem, often destroying the usefulness of alloys that might otherwise be satisfactory. So the search is on for ways and means of combatting this type of plastic flow or distortion.

The National Bureau of Standards has been testing ceramic coatings, and says that the creep rate can be reduced as much as 50 per cent. Cerium oxide coatings, for instance, can stabilize nickel-chromium alloys at temperatures in the range of



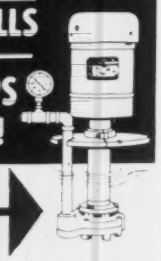
Frederic B. Stevens, Inc.

Industrial aerosols include lubricants, rust-removers, belt dressings, and mold-release agents like this Stevens *Liquid Parting* Compound, supplied in 12-ounce containers.

E. I. du Pont de Nemours & Co.

Plastic spray bottles can be used where metal might corrode. This one is nylon.

Need Pressure AND Volume? these GRAYMILLS Superflo COOLANT PUMPS give you BOTH!



Model 30JH-1. 1 HP — Various lengths. 10 GPM at 65' head. Amazingly compact. Interchangeable with 1½ HP Models.

These compact, dependable coolant pumps can give you up to 10 GPM *at* 65 ft. head. They provide abundant flow even through a maze of pipes.

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1,975° F. under pressures up to 1,200 p.s.i.

Unfortunately, though, results are not uniform with all alloys and all temperatures. At 1,800° F. for instance, ceramic coatings held the creep rate of one nickel-chromium alloy down for the first 20 to 30 hours of exposure; but, after that, the creep rate was even higher for coated than uncoated specimens.

In another test, two similar alloys showed significantly different creep rates.

The problem of metal creep, like so many others involved in jet engine design, is still a long way from being solved; but this does look like a promising approach.

In brief

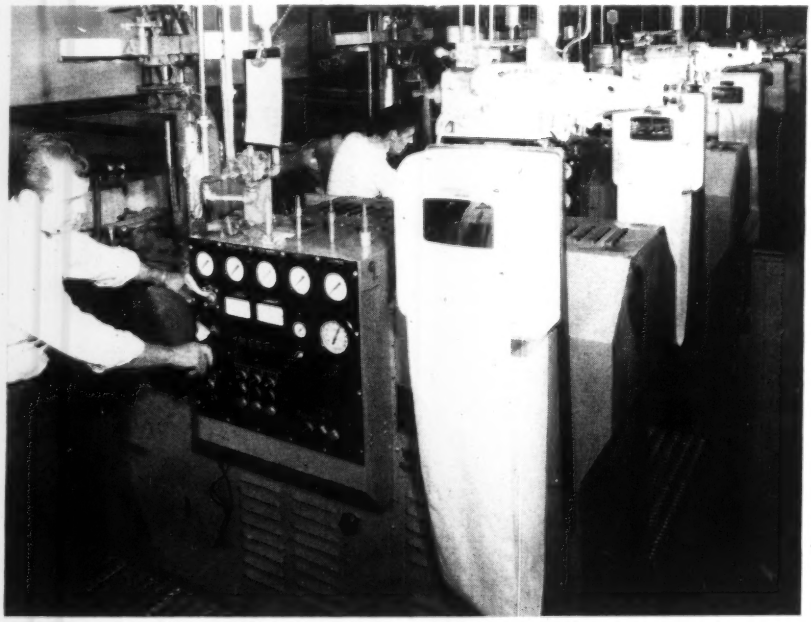
Nylon printing plates may spark the next graphic arts "revolution," Fisher Scientific suggests. One company is already testing photosensitive nylon plates as a means of slashing engraving costs; and another is experimenting with molded nylon plates for text reproduction. Advantage of nylon in both cases is its extreme toughness and abrasion resistance (see May 1955, page 42), and its resistance to printing inks.

New fibers from wood waste captured the spotlight at the American Chemical Society's recent meeting. Using lignin, a wood by-product, as the starting point, Rayonier scientists have made polyester-like fibers that are nearly as strong as nylon, stand temperatures well above the boiling point of water, and have good dyeing properties. There are still many problems to be solved before these fibers can reach the commercial market; but Rayonier now hopes that other companies will pick up the ball, and is ready to work with those interested in commercial development.

Better handling methods for bulk materials are coming from the coal industry's research laboratories. They're worth a close look by anyone who handles or processes material in this form, whether it be coal or food, drugs, abrasives, metals, or chemicals.

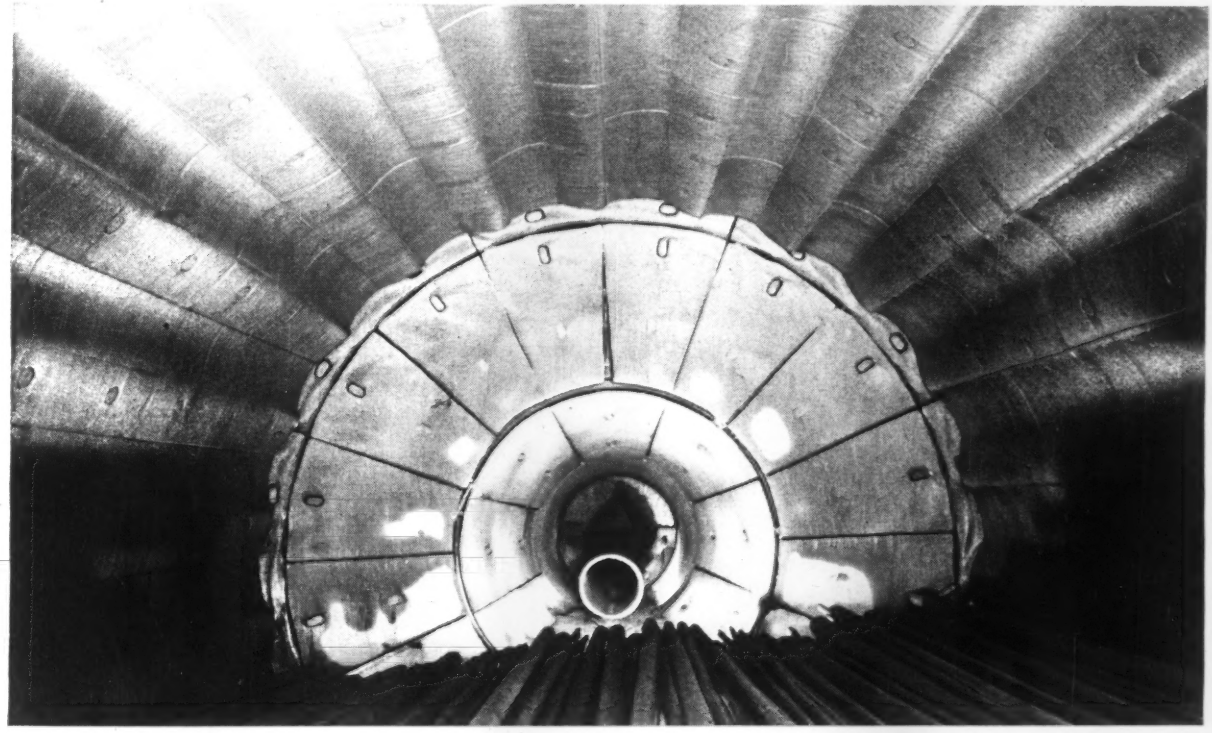
For example, Bituminous Coal Re-

How to keep 'em clean



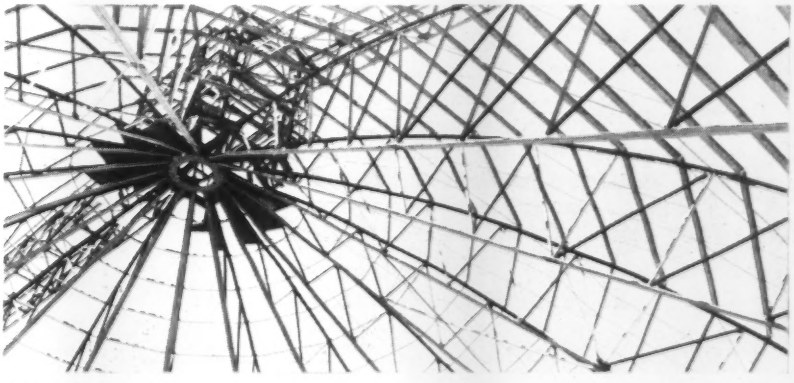
Clean hands mean cleaner, higher-quality products, but keeping them clean in the shop is no-easy task. The usual wiping rag often gets a lot dirtier than the things it's supposed to clean. One solution to the problem is this set-up, in the final test section of Chrysler Corporation's new *Torque Flite* transmission plant: A cloth towel rack mounted on each test unit. Chrysler says the racks speed clean-ups and save steps at the same time.

Only STEEL can do so many jobs so well



For A Tough Grind. This mill is used to grind the highly abrasive, low-grade iron ore called Taconite. Rolled Steel Plate Lining, bolted to the inside surface of the large revolving cylinder, lifts and tumbles the load and also protects the shell from the grinding action of the steel rods and the ore. This lining, especially made for such service, processed 4,100,000 tons of Taconite—another outstanding performance of USS Lorain-Rolled Plate Linings.

Homemade Bread, In A "Tin" Steel Pan. Commercial bakers, who can afford and demand the finest, say that "tin" bread pans give them a bigger, better loaf of bread. These "tin" pans are actually made from steel sheets, coated with a thin layer of pure tin. USS Tinplate, we call it. You can buy pans of this type at any department or variety store.



Steel Spider Web. If you ever needed it, here's proof that amazing things can be done with steel. This is an 83-foot-high dome for a potash storage building that will be covered with steel sheets. This complicated structure was *prefabricated* and erected by American Bridge Division of U. S. Steel.

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search, the national research association for the bituminous coal industry, reports "a major breakthrough" in handling finely divided wet materials, and has developed a new bulk-solids flow system that is now ready for licensing to equipment manufacturers.

New techniques for drying and screening bulk materials are also under test at BCR laboratories; among them: cascade tower systems and electrostatic cleaners.

Reports on these and other investigations are published regularly by the organization and may be purchased from BCR's Information Department, 121 Meyran Ave., Pittsburgh 13.

New milling technique, said to represent a "major breakthrough" in its field, is announced by Pillsbury Mills, Inc. An air-vortex system that creates a "man-made hurricane" inside the processing vessel makes it possible to separate flour fractions that, Pillsbury says, were never obtainable before, and to tailor-make flours for specific end uses. Pillsbury is not working on applications outside its own field, but producers of other finely divided materials might well find this "turbo grinding and separation system" worth studying.

—A.R.G.

Shooting for higher production

Like a machine gun, this stapling machine assembles electronic units with rapid-fire precision. Hughes Aircraft Company, which supplies semi-conductor components in roll form for assembly this way, reports that the system eliminates hours of hand labor.

INTERNATIONAL REVOLVING DOOR ENTRANCE, COLGATE-PALMOLIVE BUILDING, NEW YORK CITY - WINNING BUILDING IN THE 1956 "OFFICES OF THE YEAR AWARDS" ARCHITECTS: EMERY ROTH & SONS, NEW YORK, NEW YORK

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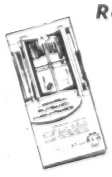
If you have any entrance problems such as drafty discomfort, slamming swing doors, loss of conditioned air through swing doors, excessive maintenance expense due to inblown grime or dirt or entrance failures — *you're paying for revolving doors, whether or not you're profiting by them. Write for the proof, now.*



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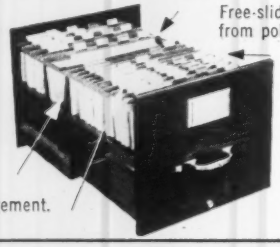

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WHAT'S IN A COMPANY NAME?

continued from page 56

discover that the name, particularly if it is not unusual, is already the property of another company in the lines or markets you would like to enter.

However, if your own name is both distinctive and memorable, there may be no need for you to seek an arbitrary or coined trade name instead.

Watch the Connotations

Often, semantic and etymological analysis of personal—or impersonal—names will provide clues to why some names draw more positive responses than others. A search of reference works ranging from books of proverbs to dictionaries of folklore will also yield useful hints. These and other sources are valuable in name analysis and development, but the last court of judgment is the public itself—as it is with a company's products and services.

Research has also revealed shortcomings of several generic names that might be thought, at worst, only a little too common. In the context of company names, the word "Federal" once may have had connotations quite similar to "National" or "Republic." As it is now, a significant number of respondents selected from the general public will have the immediate impression that the "Federal-something" company is a Government-connected enterprise. This may be due to the sharp increase in recent years in the number of Federal agencies.

Other examples are the words "Affiliated" and "Amalgamated." When several companies have merged, these words have often been used in the new names. The intention is to connote broader-scale operations while still suggesting the identities of the constituent parts. In a study designed to select a name for the merger of several product-related companies, the proposed names that incorporated "Affiliated" or "Amalgamated" almost invariably suggested, to a small but significant number of respondents, a company in some way tied in with labor organizations.

The use of the word "International" has interesting implications. A name like "International Coal Corporation" will suggest primarily a mer-

cantile or mining company that has operations extending into foreign markets. Interchanging the names so that you now have "Coal-International" will suggest the same, but in addition will very likely evoke the thought that the company is some monolithic super-cartel.

"Enterprises" is another word with disturbing overtones. To be "enterprising" is traditionally an esteemed attribute in America. In the dictionary, an "enterprise" is simply a project of some importance undertaken with boldness and energy. But a name like "Smith Enterprises" will bring out any number of damaging associative thoughts. It isn't surprising that such a name connotes a company engaged in a series of more or less separate undertakings, but more than this, it suggests "fly-by night operators," "shady business," "chiselers"—in short, a company you would be wise to stay away from if you don't want to be "undertaken" yourself.

In some fields the word "syndicate" is extensively used. Even where its use is sanctioned by tradition and where it is wholly accurate, there will frequently be a bad connotation. Among respondents interviewed in New York City it was found that the most common responses to the stimulus-word "syndicate" were "crime," "mobs," "underworld," "Chicago."

These Seem Pretentious

The list of words having questionable value in names is surprisingly long. When personal attitudes are extensively explored in a carefully designed inquiry, it is found that numbers of words selected to convey the idea of "the biggest," "the best," "the strongest," or "the safest" have lost some of their luster. For significant numbers of people, these words used as names will often have connotations precisely the opposite of those intended.

We find that other so-called prestige words are tarnished only in the sense that people resist associating them with the particular type or size of business concern for which they are being considered. In a naming study a warning signal is sounded when the associations to a test name come back as "pretentious," "that sounds like a little outfit trying to seem big," and so on.

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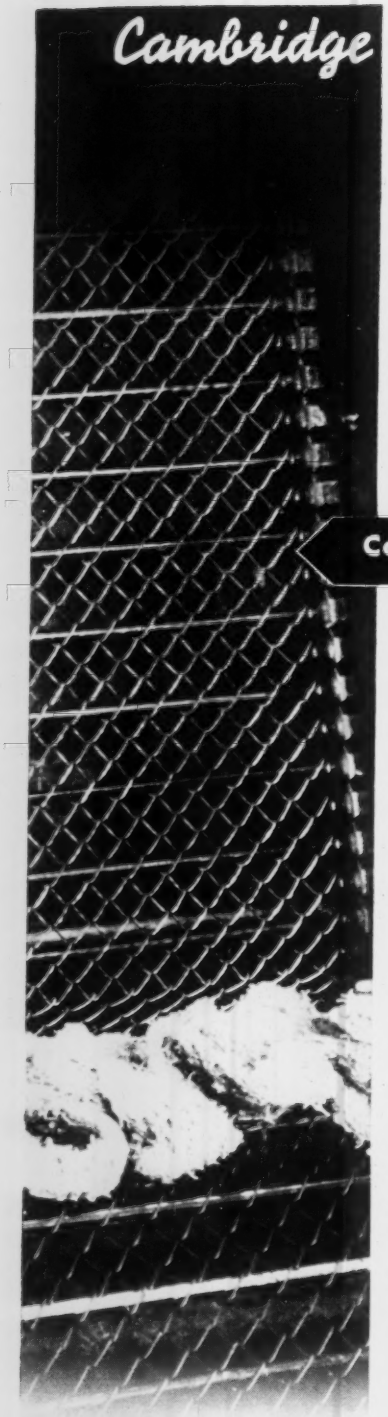

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THE BIG REPEATERS

The reader can infer from the following table how likely it is that a company may be jamming its communications with the public by reliance on one of the very common generic words as the lead word in its name:

Lead Words	List of National Concerns*	New York City Telephone Directory
American	990	2,300
United	660	2,040
National	530	1,450
New	450	1,775
General	330	570
Standard	330	400
Industrial	220	170
Western	210	...
Southern	170	...
Universal	170	400
Chicago	160	...
Superior	150	250
International	140	720
Pacific	140	...
Union	130	230
Acme	130	300
Cleveland	120	...
Atlas	115	250
Johnson	110	...
Ohio	110	...
Precision	105	...
Continental	100	280
Federal	100	220
Atlantic	100	220

*Source: Thomas's Register of American Manufacturers, 1956

plaints against small shady outfits masquerading behind impressive trade names beginning with such words as "Universal," "National," "United," and the like. A few of the common words that are suspect for some reason (or in some contexts) are "Acme," "Excel," "Premium," "Superior," "Titan," and "Guardian."

"Acme" (literally "the highest point") when incorporated in a test name has a strong tendency to suggest some small, local business with a restricted, though not "exclusive," clientele. "Excel" will often be viewed (with mild distaste) as "cute," with little suggestion of outstanding or exceptional. "Premium" has weaknesses because, to some degree, people do not think of the company as "first" or "best," but as "extra expensive."

"Superior," when tested with words lacking in distinction ("Superior Products and Services, Inc.") was found to suggest to numbers of respondents "some small concern trying to get a name that will give it stature it hasn't got." "Titan," even when tested in a context that would otherwise suggest heavy industry, degrades the concept of strength or size

by the note of parody that has entered into its associative context.

This element of parody—more exactly, the quality of self-parody many company names seem to have—may well be a more serious problem than many executives realize. The reader might find it interesting to recall cartoons, humorous sketches, movies, and plays he has seen in which the author needed a company name that would maintain a note of burlesque.

The name used in the farce *The Solid Gold Cadillac*—"Apex Clock Company"—comes to mind. And then there are the items like "Gigantic Pictures," "Gargantuan Pictures," and "Miracle Pictures"—which, by the way, had the slogan, "If it's a good picture, it's a Miracle"—favorites with the writers of farces about Hollywood. It's interesting to consider the name of one actual motion picture company in this connection—Universal-International.

"Guardian" in a name draws associative responses that can be quite inappropriate. In one study the word was being considered because of the expected connotations of "safekeeping," "security," "looking after carefully," and the like. These connotations came through, but we also got too many associations in the area of "repression," "keeper," and "coldness."

Like designing a more attractive product, designing a better name is a challenge—and field research is a valuable aid in both processes. The new discipline of name research is helping management reach its desired objectives, whether as applied to products (Darlan, the new luxury fiber made by B. F. Goodrich); to services (Direct Distance Dialing, the new long distance service of the American Telephone & Telegraph Company); or to companies.

THE AUTHOR • James McDonald Vicary was one of the first to apply projective techniques, such as free word associations and sentence completions, in motivation and marketing research. He has been associated with the J. L. Hudson Company, Benson and Benson, and Crowell-Collier Publications, and is the author of a number of articles that have appeared in business journals. He is owner of James M. Vicary Company, New York, marketing and opinion research firm.

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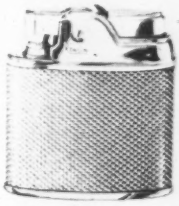
All-New RONSON "66" with "Super Trim"! Get *closer* to your business friends with Ronson's exclusive "5-Way" shave! Shaves closest—trims neatest—cleans itself! $28.50*

for Her

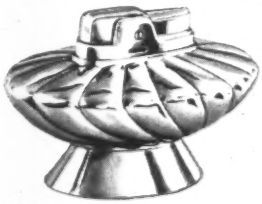
New! LADY RONSON Electric Shaver! The *glamour-gift* of the year! In fabulous fashion colors, with a sparkling make-believe diamond. With gift-case, $14.95*

RONSON Capri—Engraved design, tortoise enamel finish. Exclusive "Swivel Base" for easy fueling! $9.95*

RONSON Windlite—World's greatest windproof lighter puts your name and best wishes in influential pockets! $3.95*



RONSON Sport—Handsomely styled, ruggedly built! In bright woven mesh, smartly styled for men and women! $6.95*



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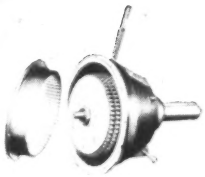
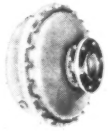
Unbiased because . . .

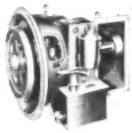
Twin Disc builds a *complete* line of friction *and* fluid drives . . . friction clutches, torque converters (both three-stage and single-stage) *and* fluid couplings. Twin Disc engineers can offer *unbiased* recommendations for *all* types of applications on industrial machinery . . . from fractional to 1000 hp.



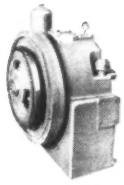
Friction Power Take Off



Fluid Coupling



Three-Stage Torque Converter



Single-Stage Torque Converter

TWIN DISC

TWIN DISC

Friction Clutches and Fluid Drives

TWIN DISC CLUTCH COMPANY, Racine, Wisconsin • HYDRAULIC DIVISION, Rockford, Illinois

Branches or Sales Engineering Offices: Cleveland • Dallas • Detroit • Los Angeles • Newark • New Orleans • Tulsa

IMPROVING MEETINGS

continued from page 54

How can we generalize about the attitude and actions that most often make for effective meetings? How can we develop a systematic new approach?

Some Conclusions:

If it is a simplified procedure we are looking for, we shall probably be disappointed. However, a general approach or "model" for looking at meeting problems may be of use. Here is one such approach:

You must plan the meeting beforehand. Many meeting problems will never occur if the members know what the meeting's objective is, why they are there, and what is expected of them. Planning for a half-hour meeting can be just as important as planning for longer meetings.

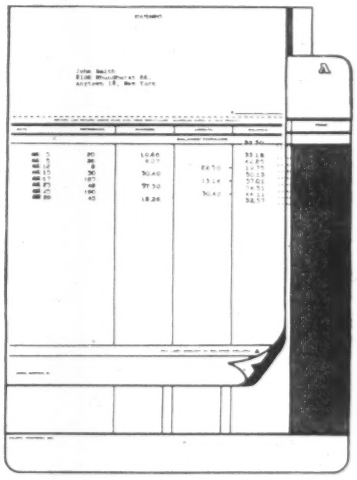
THE AUTHOR • Hugh A. Gyllenhaal began his business career as a commercial analyst for American Steel and Wire Company. Later he joined Fuller and Smith and Ross, Inc., a Cleveland advertising agency, where he worked on executive and supervisory development programs for agency clients. Now senior associate of Conference Counselors, a New York consulting organization, he has worked with industry, governmental, community, and church organizations, and professional and trade associations on management development and conference planning. Mr. Gyllenhaal is a graduate of the University of Pennsylvania and did postgraduate work at Western Reserve University and the Sorbonne. He has served as a trainer on several special projects conducted by the National Training Laboratories at Bethel, Me.

During the meeting, you must be alert to "sense" when something goes wrong, become aware of a problem before it becomes serious. Surprisingly, here is where we often miss. We may be so involved in the subject matter, the thing we are talking about, that we completely forget about the meeting *process*—our ways of working together as a group.

You need to get data to define the problem—find out what the *real* meeting problem is and not jump to conclusions from first appearances. For example, you might conclude that a member was stupid or uninformed because he failed to partici-

HOW TO REDUCE OFFICE COSTS

CUT STATEMENT AND POSTING TIME



...with Moore-designed Carbon-Ready Statements

Here is a one-writing set with so many advantages that most users save time and money from the start. It lowers cost, speeds billing and collections, eliminates copying errors and levels off peak work loads.

The Moore Carbon-Ready Statement has built-in carbon and is a self-contained form for all important billing records. It's engineered for use on all leading makes of bookkeeping and accounting machines. It makes separate ledger operations unnecessary—entries are posted to statement and ledger sheets at the same time, and can be filed together as a unit.

This is one of many forms and systems Moore designs to assure you smooth work flow and economy of operations. Moore can help meet rising costs with a really efficient office system. Call or write the Moore man—he's in the telephone directory.

MOORE BUSINESS FORMS Inc

75TH ANNIVERSARY MOORE

Over 300 offices and factories across U.S. and Canada, Mexico, Caribbean and Central America

Ali Baba only had 40 thieves

...and they could be cured through a light application of boiling oil. Chances are, most manufacturers have more than 40 unwitting thieves in operation at work in the plant. They won't be neatly aligned in so many stone jars, but these phantom pilferers are there nonetheless.

You'll find them "accidentally" whittling away at profits in many ways. Check your own operation...are reject rates reducable...have you need for continual rework...are you afflicted with machine downtime...how about scrap losses from defective materials, are they there, too?

True, each may only chisel a few dollars a day, but when you find them at work in scores of operations they add up. Their total may be a serious profit drain which can be plugged to achieve maximum return on your investment.

Magnaflux sells nondestructive test systems which pinpoint faulty materials and processes *before they start costing extra.* These new production tools are used to find defects at any stage of "in-process" operations. Thus they curtail wasted time, labor and materials. These industrial "burglar alarms" can protect profit margins and control consistent product quality, too!

Send for a copy of LOWER MANUFACTURING COSTS—our new booklet which explains where, when, why and how Magnaflux tests can help cut production costs.

moral: Oil can keep things running smoothly, but it takes Magnaflux Test Systems to keep them running profitably!

THE HALLMARK OF QUALITY IN TEST SYSTEMS

To Test is to Economize

MAGNAFLUX CORPORATION

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pate. But you might be missing an important "fact": Perhaps the real reason was that his boss was present, and he was trying to "play it safe" as long as the boss was around. But remember: *You* are a part of the data, too. Always ask yourself: "How could *I* be affecting this situation?"

Look for more than one possible solution. Often we merely react to the situation. The first impulse may be to take direct action, but second thought could suggest putting the problem to the rest of the members. In the case of a domineering member, you might approach the solution in terms of: "What can I do about *him*?"; or: "What should *I* do differently?"

And You Must Act

Finally: You must act! At times, quick, decisive, direct action is required. But in many of the cases a subtler approach will have better payoff. "Sit down and shut up!" may solve the immediate problem of a dominator, but an offended associate could be a thorn in your side for many meetings to come. *The really "dynamic" executive might be redefined as the man who studies the "dynamics" of a situation before he acts, as opposed to the old-style dynamic "go-go-go" desk pounder.*

A diagnostic approach, in short, requires that you: (1) Be sensitive to the group and its problems. (2) Diagnose the situation as it unfolds. (3) Be flexible and inventive, ready to try any new tack that will move the meeting toward its goal.

"I think you'll do better now that you're leaving, Biggle. I'm certain we will."

"National Accounting Machines save us $85,000 a year... return 67% annually on our investment!" —ALLIS-CHALMERS, Milwaukee

"Since Allis-Chalmers built its reputation on quality, we naturally look for the economy of quality in the equipment we purchase.

"In selecting office machines for specific applications, the Company has purchased more than 40 National Accounting Machines for use in sales branches and some plants in the United States and Canada. At these locations, these machines are used in part or exclusively for accounts payable, accounts receivable, cash receipts and disbursements, sales analyses, payrolls and expense budgets.

"Our original investment was recovered in savings in about 18 months. Savings continue at the rate of about $85,000 a year, which returns us about 67% annually on our investment.

"These Nationals have paid us additional dividends in the ease of operator training, improved operator morale, and on-time and on-the-spot statistical information that we require for the operation of our business."

T. D. Lyons

Comptroller, Allis-Chalmers Mfg. Co.

In your business, too, National machines will pay for themselves with the money they save, then continue savings as annual profit. Your nearby National man will gladly show how much you can save—and why your operators will be happier.

THE NATIONAL CASH REGISTER COMPANY, DAYTON 9, OHIO

989 OFFICES IN 94 COUNTRIES

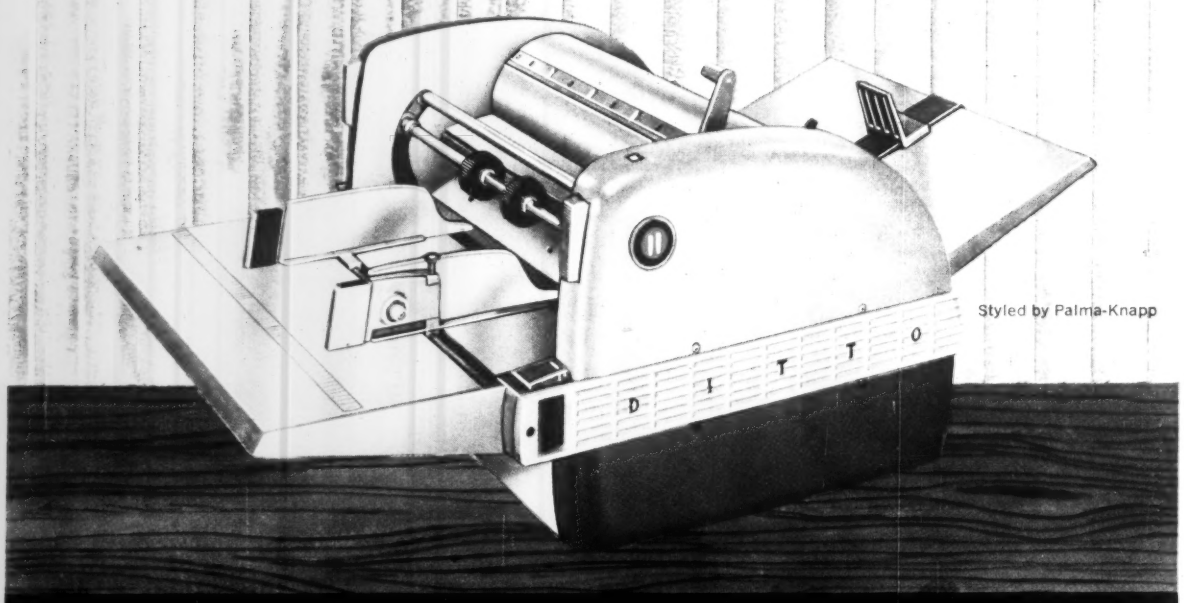
TRADE MARK REG. U. S. PAT. OFF.

National

ACCOUNTING MACHINES

ADDING MACHINES • CASH REGISTERS

The Remarkable New DITTO D-70



Styled by Palma-Knapp

NEW Beauty **NEW** Styling **NEW** Speed **NEW** Economy **NEW** Copy Capacity
NEW Copy Area **NEW** Ease of Operation **NEW** Performance Efficiency
NEW Precision **NEW** Versatility in Action **NEW** Horizons in Liquid Duplication

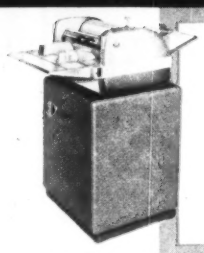
A DUPLICATOR THAT CHALLENGES COMPARISON

The new DITTO D-70 Duplicator sets new standards and opens new horizons in liquid duplicating. Its copy range embraces the endless variety of communications, reports, forms, records, and instructions that are indispensable to the operation of today's business. Larger copying surface, full ream feed, push-button operation, registration control, segmented master clamp give the D-70 unrivaled speed, flexibility and adaptability. Smart functional styling and choice of colors make it an asset to the finest office surroundings. Only by seeing the D-70 in action can you fully appreciate the many things it can do for you.

DITTO

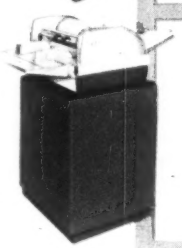
Write, or ask your local DITTO representative, for beautifully illustrated brochure describing the many exclusive features which make the D-70 an unprecedented advancement in liquid process duplicators.

DITTO, Inc., 6822 N. McCormick Rd., Chicago 45, Ill.
DITTO of Canada Ltd., Toronto, Ontario



GREY AND BROWN

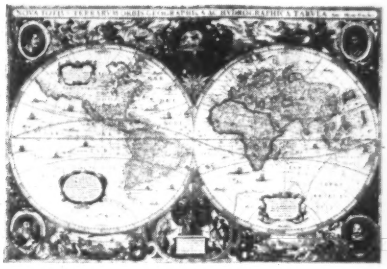
An attractive two-tone effect that harmonizes with modern office decor. It's quiet, yet has unmistakable charm and eye appeal.



GREY AND GREEN

An alternate two-tone combination made available for those who favor the current trend to bright coloring in office equipment.

INTERNATIONAL MARKETS



ALEXANDER O. STANLEY, *Editor*

AROUND THE WORLD WITH 3 BILLION ADVERTISING DOLLARS

Moving plants to overseas locations is changing the advertising habits of U.S. companies. How $478 million was spent by U.S. companies, how companies in 22 foreign countries allocated more than $3 billion in advertising, is spelled out by the 1957 I.A.A. survey, which is abstracted in this DR&MI report.

BRIGHTLY LIGHTED billboards on Ginza, the Broadway of Tokyo, profusely illustrated magazines racked in the kiosks of Paris, televised sports events in Mexico City, Beirut newspapers with Arabic mastheads—these are but a few of the media that carried $478 million worth of U.S. advertising copy in 1956. This was the estimated total budget of 3,600 U.S. companies sampled in the survey on international advertising expenditures by the International Advertising Association of New York. And a collateral study of 22 countries reports that advertising outlays abroad (by U.S. and foreign companies) topped $3 billion in 1956.

With 1956 exports breaking through to a new high of $17.1 billion, and sales of overseas branches of U.S. companies running ahead of the 1955 total of $30 billion, heavier advertising outlays were to be expected. But two surprising and significant developments took place, and may influence management planning in the immediate future:

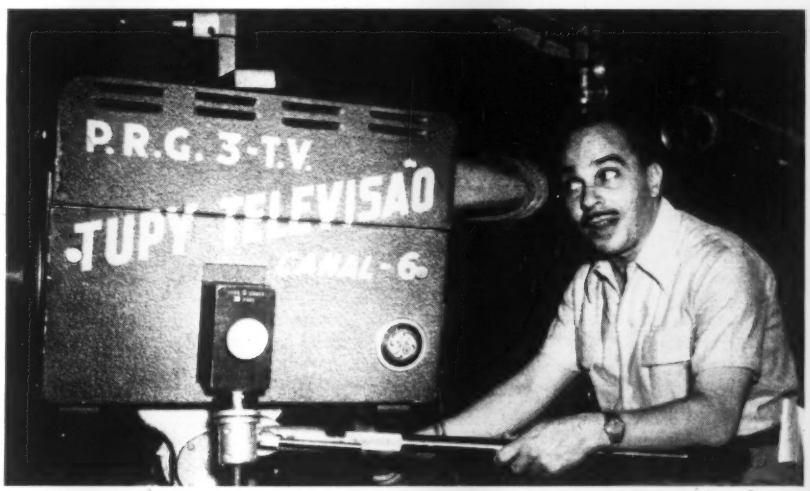
1. Since 1953, advertising budgets of *U.S. overseas branches* have jumped from a level of $210 million to $400 million. Contrast this with the modest $8 million gain since 1953 *in U.S. export advertising* to a $78 million total in 1956.

This shift makes sense in the light of these facts: (a) More U.S. companies are exporting plants instead of products, and (b) advertising of goods made overseas can be paid for in *national currency* generated from *national sales*.

2. Foreign trade journals and magazines are today the No. 1 media of U.S. international advertising. With insertion totals of $115.9 million, these media absorb almost one quarter of *all* budgets.

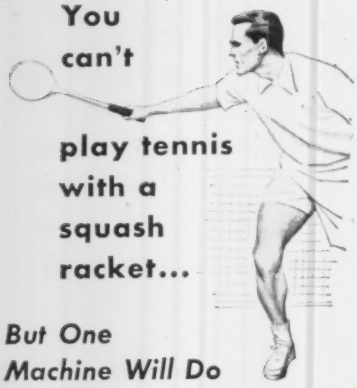
Reason: Licensing agreements as well as new plant installations are changing the composition of American-made products abroad, opening new areas of sales in the durable and capital goods field especially. This has required consideration of different advertising channels.

In 1953 foreign trade journals and



As TUPY-TV of Rio de Janeiro goes on the air, even the cameraman enjoys the show.

You can't play tennis with a squash racket...



But One Machine Will Do Every Photo-Copying Job

hunter CUB

ONLY $195

All-metal, all-electric; finished, dry copies in 30 seconds; made by the company which pioneered photo-copying in the United States.

When you get a Hunter Cub Photo-Copyist, you've got a one-man gang. The Cub copies everything—signatures in ink, notations in pencil, any mark on any paper. And the Cub is a bear for figures—from birth certificates to statistical reports. Remember, too, that Cub's truly photographic reproductions on Hunter HeccoKwik Papers are permanent, non-fading records.

No budget-strainer, the Cub is priced at only $195. It needs no darkroom—works in normal light. It's clean—no chemicals touch the operator. Easy to run—with Hunter Auto-Feed (optional) it's almost automatic. Both Cub and papers are American made—no import delay or risk. Don't waste your girls' time making copies when a Cub can turn a day-long typing job into minutes. We'd like to demonstrate—how about mailing the coupon today?

Clip to your letterhead:

HUNTER PHOTO Copyist PRODUCTS REPRODUCTION

PIONEER IN PHOTO-COPYING

Hunter Photo-Copyist, Inc.
46 Spencer St., Syracuse, N. Y.

Gentlemen:
I want a Hunter Cub demonstration in my office.

TABLE I: ANALYSIS OF THE FIELD OF ACTIVITY AND 1957 PROJECTIONS FOR I.A.A. SURVEY RESPONDENTS

Column:	A	B	C	D		
Field of Activity	Total 1956 U.S. Exports in billion $ **	Active in indicated field (%) ***	With subsidiaries, branches overseas (%)	1957 Export Advertising Will Be (%)		
				Up	Same	Down
Food, beverages, and tobacco	2.814	3	66	23	77	—
Capital goods	2.137	3	23	79	21	—
Ferrous and non-ferrous metals	2.005	2	6	31	63	6
Automobiles and auto parts	1.356	10	66	27	63	10
Farm and road building machinery	.913	10	50	41	56	3
Chemicals and paint	.767	7	50	29	67	4
Wearing apparel and fabrics	.629	2	51	69	31	—
Petroleum products	.567	1	63	50	25	25
Consumer durables	.250	15	38	39	47	14
Drugs and pharmaceuticals	.245	2	90	83	17	—
Machinery and tools	.237	26	33	31	61	8
Office equipment	.116	1	52	43	50	7
Rubber goods other than tires	.097	*	100	—	100	—
Electrical and electronic equipment	—	7	36	53	47	—
Toiletries and cosmetics	—	3	91	54	46	—
Other consumer goods (n.e.s.)	—	2	33	5	71	24
Miscellaneous	—	3	43	26	74	—
Airlines, shipping, travel	—	1	40	80	20	—
Banking, finance, insurance	—	5	39	—	100	—
Engineering, construction	—	4		2	88	10
Total exports in group surveyed						$12,137,000,000
All U.S. exports, 1956						$17,161,000,000

*Less than one-half of 1 per cent
**Reported by Bureau of Foreign Commerce
***Limited overlap because some companies are in more than one field

TABLE II: ESTIMATED BREAKDOWN OF U.S. FOREIGN EXPENDITURES BY MEDIA

	1956 (%)	1956 (in million $)	1953 (in million $)
Foreign magazines and trade journals	24	115.9	23.0
Radio	22	106.2	47.0
Point-of-sale material, dealers signs, and so on	19	88.2	23.0
Foreign newspapers	11	52.1	107.5
Television	5	22.3	2.5
Direct mail	4	17.3	13.0
U.S. international trade journals	3	14.9	9.0
Movies	3	14.8	—
U.S. international consumer magazines	3	14.9	15.5
Calendars, novelties, catalogs, and so on	2	8.6	11.0
Billboards	1	3.7	7.5
Publicity and public relations	*	1.7	—
Foreign editions of U.S. newspapers	*	1.3	**
Miscellaneous	3	16.1	21.0
Totals	100	478.0	280.0
Number of respondents		453	414
I.A.A. sample (number of companies)		3,600	3,450
Estimated expenditures (extrapolated) of export advertising (in million $)		78	70
Estimated expenditures (extrapolated) of U.S. branches (in million $)		400	210

*Less than one-half of 1 per cent
**Included with U.S. international consumer magazines

TABLE III: U.S. FOREIGN SALES VOLUME IN 1956 OF 453 I.A.A. RESPONDENTS

	Export sales (%)	Sales by foreign branches, subsidiaries, etc. (%)
Under $50,000	20	11
$50,000–99,999	13	4
$100,000–499,999	25	15
$500,000–999,999	14	5
$1,000,000–4,999,999	19	39
$5,000,000–9,999,999	4	9
$10,000,000–24,999,999	3	6
$25,000,000–49,999,999	2	3
$50,000,000–74,999,999	*	2
$75,000,000–99,999,999	—	2
$100,000,000 and over	*	4
	100	100

*Less than one-half of 1 per cent

magazines were able to attract only $23 million or 12.5 per cent of total advertising outlays. Then, foreign newspapers dominated the picture, accounted for almost 40 per cent of the $288 million expended for international advertising. Today, foreign newspaper advertising (on the part of U.S. companies) has been sliced in half; newspapers are in fourth media position with $52.1 million. Parallel with U.S. experience, television is coming up with a rush; from a picayune $2.5 million, foreign television commercials now account for $22.3 million. And radio is also making good strides. How other media have fared is detailed in Table II.

The trend to produce goods within markets overseas is heavily underscored by the high percentage of the I.A.A. respondents with branch operations abroad (see Column C, Table I, page 154). One of the nineteen major industry groups had the modest percentage of 6 per cent. But 30 through 60 per cent categories are commonplace, indicating the popular emphasis on bringing plants nearer to markets overseas.

1957 Budgets Climb

That international trade executives have become case-hardened to the political unrest and upheaval in the world picture is reflected in 1957 advertising programs. More than half the companies with branches abroad have raised their advertising appropriations, in many cases by 50 per cent or more compared to 1956. For direct export operations, the majority of the companies (59 per cent) planned to spend the same amount as in 1956, while 34 per cent expected to spend more this year. But first quarter 1957 exports, at a record high of $5.425 billion, suggest the probable recasting of export advertising budgets in the months ahead.

Based on the I.A.A. survey, more advertising money will be spent in 1957 in almost all fields of activity. Leading the list are drugs and pharmaceuticals, up 83 per cent; airlines, shipping, and travel up 80 per cent; capital goods, up 79 per cent; wearing apparel and fabrics, up 69 per cent. In fact, modest increases in 1957 advertising budgets are the exception. The rule: Gains of 27 to 54 per cent (see Column D, Table I, page 154). This spells a sustained drive to expand direct and indirect export sales to levels that would have

(ADVERTISEMENT)

As a service to its readers, DUN'S REVIEW AND MODERN INDUSTRY prints the following listings which are submitted without recommendation or commitment on its part. Rates for listings on application.

TO BUY

AUSTRIA

0223 Will purchase direct polyethylene granulates and powder for molding and extruding. TRANSALPINA UNTERNEHMUNG fuer INDUSTRIEBEDARF, 8 Elizathstrasse, Vienna I.

DENMARK

0224 Desire new and improved types of machinery for the tire retreading industry, including rolling machines for camelback manufacture and machines for peeling, buffing, brushing, testing and balancing. CHR. PETERSEN, 68 Ny Carlsbergvej, Copenhagen.

FINLAND

0225 Purchase direct or obtain agency for road-building tractors—four-wheel drive, diesel engine, 3 to 5 tons. KORPIVAARA OY, Mannerheimintie 5, Helsinki.

INDIA

0226 Wish to purchase direct complete plants, one each for the manufacture of hand sewing machine needles, knitting machine needles and automotive and flashlight bulbs. JWALA FABRICS, LTD., P.O. Jwalanagar, Rampur, U.P.

ITALY

0227 Wish to buy and to act as sole selling agent for Italy for automatic controls and instruments for aviation, chemical, and oil-processing industries. ING. R. COPPO & CO., 37-5 Via XX Settembre, Genoa.

MEXICO

0228 Wish to purchase and distribute additional lines of pharmaceuticals with possibility of licensing agreement to manufacture and package them at a later date. MARIO DIAZ CEBALLOS—PRODUCTS KAN, S.A., Durango No. 197 y 123, Mexico, D.F.

NETHERLANDS

0229 Wish to purchase direct all kinds of tools and parts and accessories for airplanes both civil and military; and aviation safety equipment. American standard specifications are acceptable. Also wish representation of U.S. manufacturers of same goods for Netherlands, Belgium, Luxembourg (Benelux) and West Germany. N.V. NESOLAS, 150 Nassaukade, Amsterdam, W.

0230 Specialty farm and garden equipment, including garden sprinklers and couplings desired for direct purchase on an exclusive basis. AGRO-MOTOR KUNZLI, 40 Handelskade, Zutphen.

NEW ZEALAND

0231 Wish to purchase direct from manufacturer orange pulp or dehydrated pulp for preparation of syrups or cordials; must contain 35 per cent orange cells. TOOP & NEILSON LTD., 2-8 Allen Street, Wellington.

SWEDEN

0232 Will purchase direct and or represent U.S. manufacturers of good-quality cosmetics: lipstick, nail polish, powder, etc. Desire literature and price lists as soon as possible. ABERVINO, 6 Vallgatan, Goteborg C.

TO SELL

BRAZIL

0233 Wooden lamp bases with appearance of being hand carved and painted, for direct export. ABATJOURS, DECORACOES e OBJETOS ARTISTICOS, LTDA., Rua Miguel Lemos 44, Rio de Janeiro.

BURMA

0234 10,000 TONS OF DRESSED GRAPHITE ORE. ANALYSIS AVAILABLE FROM THE EXPORTER. MAUNG AYE, 106, 38th St., RANGOON.

ENGLAND

0235 FOUNTAIN PENS FOR EXPORT DIRECT OR THROUGH AGENT. S. GLASSNER, 68 Worple Rd., LONDON, S.W. 19.

FRANCE

0236 Wish to export direct large quantities of high-quality cigarette boxes made of mirror glass with colored or engraved lids; also music boxes and other gift items in mirror glass. ETABLISSEMENTS GARNIER, 12 rue Lescaris, Nice.

GERMANY

0237 Paper machines and machine tools for export direct or through agent. O. DOERRIES A.G. 52 Veldenerstrasse, Dueren/Rhineland.

IRELAND

0238 Large quantities of medium- to high-quality men's neckties made in rayon, wool and Irish tweed and silk for direct export. SIMPLEX BRACE & TIE CO., LTD. 15 Montague St., Dublin.

ITALY

0239 Cutlery, nutcrackers, poultry shears and corkscrews made of steel, stainless steel and brass. 5000 units monthly available for export direct or through agents. Illustrated leaflet. FRATELLI VERONESI di G., Via Marsala 42, Brescia.

KOREA

0240 Export direct or through agent 10,000 each monthly of decorative ornaments such as hand-carved and painted wood figurines. Photographs and descriptive details available. SUNG HA TRADING CO., LTD., Room 101, 91 2-ka, Myung-dong, Choong-ku, Seoul.

NORWAY

0241 Leading Norwegian furniture-factories wish to contact firms interested in sale of high-class Norwegian furniture on foreign markets. HENRY P. ANGELL, Floenbakken 41A, Bergen.

SWEDEN

0242 High-quality machine tools of Swedish manufacture for export through agents, dealers or distributors. Catalog available. ELOF HANSSON, Posthuset, Goteborg C.

SWITZERLAND

0243 Wish to export direct high-quality electro-mechanical and mechanical precision instruments including anemometers, meteorological instruments, dial indicators, flexmeters, clinometers, etelmeters, and electrical equipment. STOPPANI A.G. 29 Koenizstrasse, Bern.

TO REPRESENT

FRENCH WEST AFRICA

0244 EXCLUSIVE AGENCY SOUGHT FOR ANY WELL-KNOWN BRAND OF AMERICAN CIGARETTES. PAUL MATTER, 8 ave. de la Republique, Dakar.

IRAN

0245 We accept agencies for light machinery electrical equipment, enamel and varnish, hardware, stationery, cosmetics, chemicals and textiles. AZARM TRADING CO., LTD. 87 Ekbatan Ave., Teheran.

NEW ZEALAND

0246 Wish to obtain agency from U.S. manufacturers for special high-speed sewing machines and ancillary equipment. TEXTILE YARNS & MACHINERY, LTD., Queen & Victoria Streets, Auckland.

RHODESIA and NYASALAND

0247 AGENCY SOUGHT FOR CUTLERY, CHINA AND GLASSWARE. MARKITEX PVT., LTD. 413 Pockets Bldgs., Stanley Ave., Salisbury.

it takes a
SYSTEM
to save
filing
space · time · money

The patented, easily operated drop doors are scientifically designed to give maximum protection to records. This feature is just another reason why more and more companies are adopting the Visi-Shelf Filing System!

"Visi-Shelf FILING SYSTEM
Protected by U.S. Patents

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Name .....
Company .....
Address .....

been considered improbable only a few years ago. The fields to watch particularly are machinery and vehicle exports, which zoomed to $730.7 million in March 1957, compared to $482.9 million in the preceding month.

It is almost incredible that of the group surveyed, 33 per cent of the companies that export and 17 per cent of the companies with branches abroad spent no money for advertising. But in examining the survey base (3,231 so-called small companies, 369 large companies) the reason why quickly becomes apparent. One-third of the companies were exporting less than $100,000 annually; 15 per cent of those with branches abroad were realizing less than $100,000 in annual sales volume. (See Table III, Page 154.)

Budgets Grow as Sales Grow

Where advertising money was spent, 42 per cent of the respondents who export appropriated 1 per cent or less of annual sales volume for advertising; 44 per cent of American-owned overseas branches set aside the same percentage for this purpose. The median for export advertising versus export sales ranged in the 2-5 per cent bracket; in the overseas branch division the median ran from 2-10 per cent. This is roughly parallel to the practice followed in the domestic end of the responding companies, with almost half the group reporting domestic advertising budgets at 2-5 per cent of domestic sales.

Admittedly, any tight comparison of international with domestic advertising patterns is futile. The markets, the merchandise, the methods vary, will continue to be disparate because of their very nature. Studies of the kind performed by the International Advertising Association are essential but require even more depth and frequency to satisfy the expanded interest in all facets of international trade.

Lacking, for example, is a *census of U.S. companies currently engaged in selling overseas*, whether directly, through branches, or under license agreements. Figures for the large companies, or those large in the sense of international volume, are easy to find. What is not known is the number and the industrial groupings of the thousands of U.S. companies now casually or actively interested in opening or expanding sales channels overseas. Figures ranging from 12-40,000 companies are bandied about. Until an effort is made to define the "universe" of U.S. companies participating at any level in markets abroad, important facts and findings will continue to be elusive, place us at a competitive disadvantage in the race to reach new sales frontiers. The "census" project is formidable, but the rewards in terms of new profit areas are intriguing.

Assuming that the present sensitive national budget situation precludes this type of study by the U.S. Department of Commerce, one practical means of developing the needed base is a cooperative program by the many trade associations interested in international trade. Since these organizations are scattered throughout the 48 states, national coverage is possible.

Problems in Research

If our own base for adequate advertising research is thin, the available factors for studying advertising patterns abroad are even more tenuous. In 1956 the first effort was made by the I.A.A. to round up some statistics on internal and external advertising expenditures by the other exporting countries of the world—and there are some 99 of these. Educated estimates and "guesstimates," mostly the latter, trickled in from advertising associations and agencies in 28 countries. As a group they reported total expenditures of $3.1 billion in 1955 (compare this with $9 billion of U.S. advertising in 1956). Now the new collateral study (22 countries) for the year 1956, just released by the I.A.A., shows expenditures estimated at $3.2 billion. The results for both years are tabled on opposite page to establish a comparative analysis and to provide the maximum coverage in area, especially as a number of countries did not file for both years. As a *rough yardstick* the figures reported, country by country, offer an approximate evaluation that can be of some use.

For foreign companies, local newspapers are still the most popular media and dominated the scene both in 1956 and in 1955. They accounted for almost one-third of advertising space bought.

The 1956 I.A.A. study, which analyzes $3.293 billion of advertising disbursements in 23 countries, goes

ADVERTISING EXPENDITURES IN MILLION DOLLARS

Country	1956	1955
Canada	532.5	180.0
LATIN AMERICA		
Argentina	54.0	86.0
Bermuda	—	1.7
Brazil	141.5	83.0
Chile	—	3.3
Colombia	—	20.0
Cuba	6.5	36.0
Mexico	—	32.0
Netherlands Antilles	—	0.6
Nicaragua	—	0.9
Peru	—	4.5
Venezuela	25.3	—
EUROPE		
Austria	—	20.0
Belgium	—	55.9
Denmark	44.2	40.0
France	275.0	212.0
Germany	595.0	570.0
Greece	5.0	3.0
Ireland	3.0	—
Italy	105.0	—
Netherlands	75.0	85.0
Norway	11.5	—
Sweden	128.0	101.5
Switzerland	125.0	192.5
United Kingdom	896.0	912.0
AFRICA MIDDLE AND FAR EAST		
Australia	—	200.0
Egypt	—	3.0
India	15.7	—
Israel	3.3	—
Japan	204.0	168.6
Lebanon	1.8	1.6
Pakistan	1.7	1.1
Philippines	—	9.7
Straits Settlements	—	5.4
Union of South Africa	44.4	—

into some detail as to media selection, the allocation of advertising expenditures by U.S. branches abroad and by foreign companies, the advertising disbursements in other companies, the names of the leading U.S., foreign, and national advertisers in most of the countries reporting. This study, the 8th Annual Survey of International Advertising, is incorporated with the complete report on U.S. international advertising expenditures and is available from James L. Gilbert, executive vice president, International Advertising Association, Hotel Roosevelt, New York.

In the last ten years international advertising has become a powerful driving force in the complex machinery of international trade. In the next ten years it may change its function, may become the "governor" of profit output, helping to stabilize production through distribution controls, influencing the velocity not only of international but of domestic industry and commerce. —A. O. S.

THEY SAY MY BOSS IS A BORN SALES MANAGER!

"HE SAYS THE DUN & BRADSTREET STATE EDITIONS SHOULD GET THE CREDIT. He just makes sure each salesman works his territory with the facts in a current State Edition—and week after week the men turn up the extra sales to beat the quota."

Your men can do the same. Every line in a State Edition tells a sales story—the name of the business, what they sell, how long they've been in business—and generally with a rating showing financial strength and credit appraisal. These are the facts a salesman needs to plan his daily calls—put the most effort where it does the most good.

The July State Edition is now ready. For further information on this sales tool, fill in and mail the coupon below.

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I'm interested in your State Editions. Please send full details, including prices. No obligation on my part, of course.

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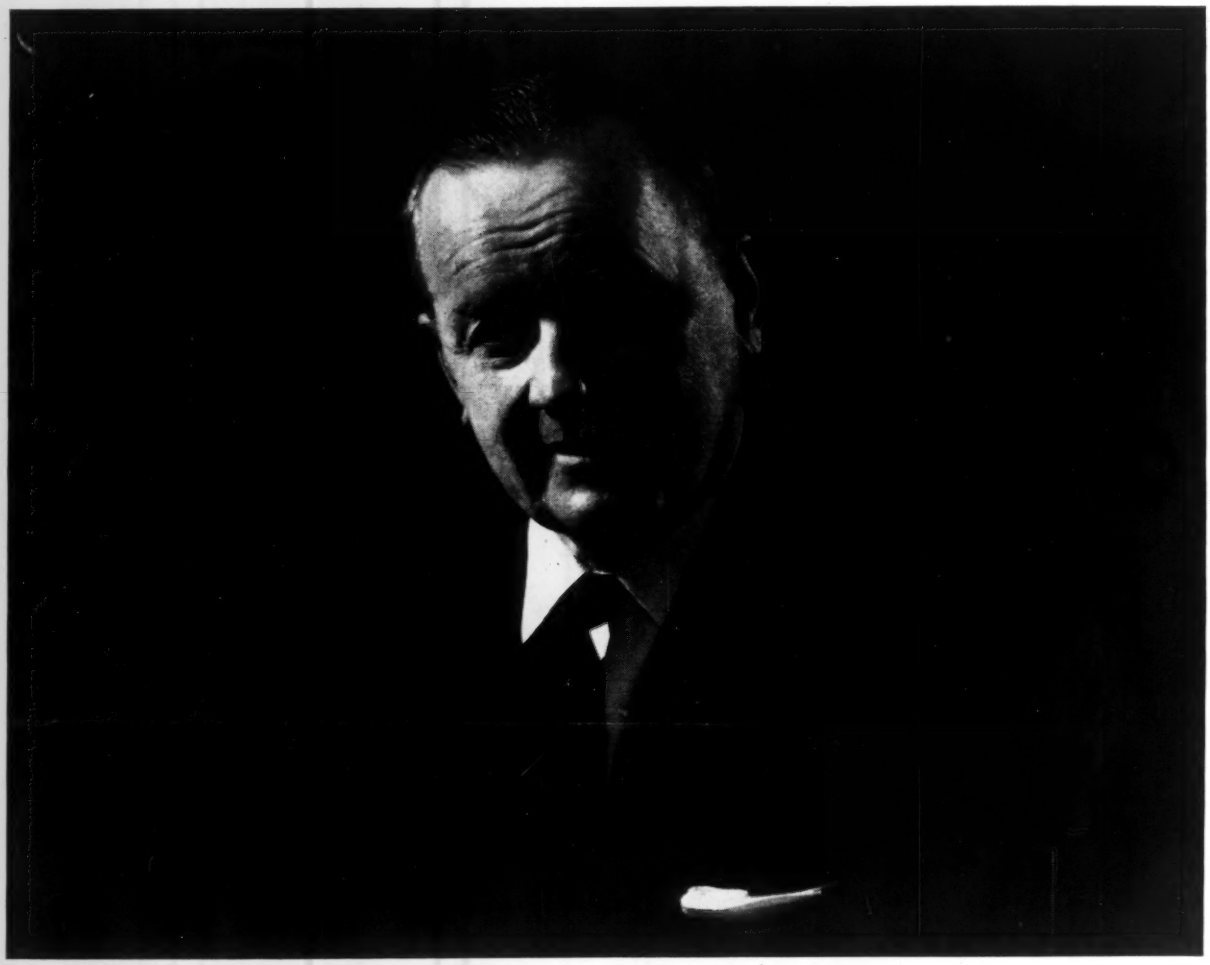
Company .....

Address .....

City ..... Zone ..... State .....



T. S. PETERSEN

"Investing in America has made our country great"

"The American competitive enterprise system was founded on the work and savings of the people and has produced the highest standard of living in history.

"Our people of their own free will have made all forms of investment from Government Savings Bonds to venture capital for new enterprise. Competitive enterprise is dependent on the continued supply of these funds, which benefit consumers, workers, and the national interest.

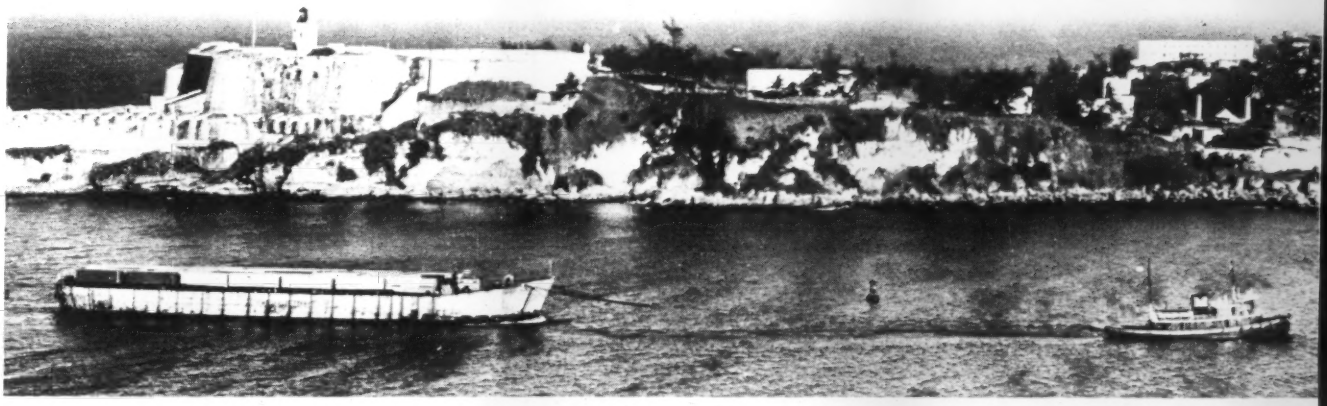
"Investing in America through Savings Bonds and venture capital has helped make our country great and this idea needs to be brought home to all the people."

T. S. PETERSEN, *President,*
Standard Oil Company of California.

If your employees do not enjoy the advantages of the Payroll Savings Plan—or if participation is less than 50%—act right now. A letter to Savings Bonds Division, U.S. Treasury Department, will bring prompt assistance from your State Director. He will help you put an application blank into the hands of every employee. It requires a minimum of effort—and it is a gesture that will win the approval of the people in your company.

To Speed Cargo Overseas

HITCH YOUR TRAILER TO A TUG



An old LST, converted to a freight carrier, gets towed out to sea on its way to a distant port.

But the latest development in fishybacks is self-propelled.

Here's a report on how it works and what it means to shippers.

IT ALL STARTED with the idea of reducing loading and unloading time for overseas cargoes. Why not ship whole trailers instead of piecemeal cargo—and let the shipment roll to its destination? The question was intriguing, the problems complex. From this germ of an idea a new transportation method developed, now popularly identified as "fishyback," the international equivalent of "piggyback."

Four years ago a company was formed in Miami known as "TMT Trailer Ferry, Inc." Headed by Eric Rath, who had tussled for years with the development of more efficient transportation systems, the group began the actual operation of hauling trailerships over water to Puerto Rico, the Virgin, Leeward, and Windward Islands.

A Bright Future

Initially, converted LST's towed by tugs provided the floating platforms, and this continues to be the pedestrian technique. But the fleets of the future will consist of specially designed, spaciously constructed vehicles that will load hundreds instead of tens of trailers, ply between more distant ports, unload from and load onto special ramps. The trailers will be shunted to trailer parks, then warehouses, then plants and distribution centers throughout the world.

With the experience acquired from several years of floating trailers across the Caribbean, the TMT management decided to go into deeper waters with heavier loads. The Carib Queen is the result. A 'super carrier,' this converted LSD (loading ship dock) is literally a floating dock; its length is 475 feet; beam, 72 feet; draft, a comparatively shallow 12 feet. Operating at a speed in excess of 16 knots per hour, this largest, swiftest of *self-propelled* trailerships moves 92 trailers, 97 automobiles, 500 tons of bulk cargo. And it can even accommodate twelve passengers. Contrast this with the average load of 55 trailers and 30 automobiles carried in converted LST's, tugged from port to port. Where a 1,100-mile trip from

The original trailership system of tugging cargo from port to port is still in use today. But now new and powerful tugs can move two of these floating platforms in a double-tow. And in the short space of four years, advanced techniques have developed fast enough to permit the launching recently of a self-propelled trailership—the Carib Queen.

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by **ROBERT D. LOKEN,** Assistant to the Publisher, Life Magazine
and **EARL P. STRONG,** Director of Management Development, Civil Service Commission

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Written in simple language from the standpoint of the supervisor, this book covers, step-by-step, the duties of the line and staff supervisor in organizing, planning and controlling production—from evaluating personnel requirements, training the new employee, and delegating responsibility to handling job breakdowns, grievances, orders and so forth.

Job Management: key points in supervision, steps in organizing, planning and control. *Man Management:* the new employee, building workers through training, making an analysis of duties performed, problems of people at work, evaluating, supervisory methods. *Appendix:* sample job analysis, sample training plan.

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Special trucks shunt the loaded trailers into the hold of the Carib Queen for transport.

Jacksonville to Puerto Rico took six to six and a half days, the new super fishyback can move more than double the cargo in half the time.

Early this year the area of operation was sharply expanded when St. Nazaire, France, was tabled as a port of call—3,000 miles distant—nine to ten days in time. Under Government charter, the super fishyback Carib Queen has made a number of round trips, carrying Army cargo out—returning with commercial loads.

Startling Comparison

The trailership technique is getting a hard look of appraisal from steamship operators. As export and import cargo grows in volume, as foreign port facilities are taxed with heavier traffic, as men and materials costs range into higher zones, turnaround time becomes the sensitive point. Here are some eye-opening statistics:

Comparative Capacity	The C-2*	The Carib Queen
Time required for cargo build-up	35 days	4 days
Round trip 1 port call	39 days	18 days
European/U.S. areas round trips possible year	9	19½
Roll-on—Roll-off time for equivalent cargoes	3 days	4 *hours*
Cost per handling ton**	$21.60	$8.40
Measurement tons	14,230	8,300
Long tons	5,015	4,200
Total ton load per 8-hour shift	1,254	7,150
Annual tonnage equivalence	210,000	278,850

* The C-2 is a conventional general cargo vessel 459 feet in length, 63 feet beam, 26 feet draft. A somewhat larger version exists in the C-3 which carries both cargo and passengers.

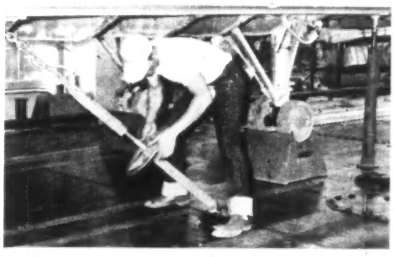
** Based on comparisons with C-3.

As is usually true in any new field, one innovation generates a chain reaction. Special mechanical equipment known as the "Trailerloader" was developed to move the units into the hold of Carib Queen swiftly but safely. Tie-down devices were perfected to lash the trailers securely for transit over the bounding main. A special "Shiptrailer" is now being built on the principle of the "low-boy" or machinery trailer. Goose-necked and hugging the ground, it will reduce the loss of cubic space below the trailer.

The "Carnet" System

But paperwork is also important in any shipment. To reduce the burden, speed up customs clearance in European transshipment, the individual trailer earmarked for delivery abroad carries a special booklet called "Carnet T.I.R." (Transport International De Marchandises Par La Route). The "Carnet" system is not new; it was in use prior to the advent of the fishyback. What *is* new is the program sponsored by TMT to have the U.S. Government participate in this international agreement, which is now operative in Austria, Belgium, Denmark, France, West Germany, Italy, Luxembourg, Norway, Sweden, Switzerland, The Netherlands, and Czechoslovakia. And the extension of the plan to Latin America in conjunction with the Pan American Highway is an exciting ancillary development.

The "Carnet" is a simple but effective system for eliminating inspection and customs clearance at each border crossed in transshipment. In effect the "Trailership" is bonded by the International Road Transport Union (headquarters in Switzerland) to guarantee the payment of

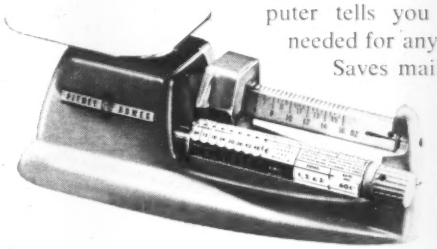


Before sailing, all trailers are securely fastened with special steel lashings attached to clover-leaf supports embedded in the decks of TMT's trailerships, shown above.

Big postage saver for the small office

• An inaccurate mail scale can cost you plenty! *Over*weigh, and you waste postage (dozen wasted 3¢ stamps a day runs into $100 a year!). Or *under*weigh, and you cause customer annoyance and ill will (also delays) with your letters delivered "Postage Due."

• Now, any office can afford this new, low-cost, Pitney-Bowes "4900". Accurate, easy to use, it weighs mail from ½ oz. to 1 lb. And the cylindrical computer tells you quickly the exact postage needed for any class of mail, or parcel post. Saves mailing time as well as postage!



• Other PB scales include a parcel post model up to 70 lbs. Ask the nearest PB office to show you. Or write for free illustrated booklet.

FREE: *Send for a handy desk or wall chart of Postal Rates, with parcel post map and zone finder.*

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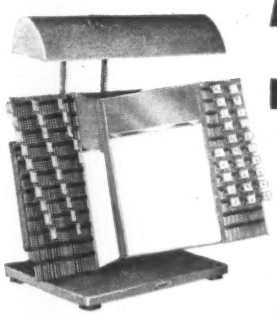

TELEPHONE SWITCHBOARD

NAME	PHONE	ADDRESS	CITY	STATE
Fulcher, C. B.	TR 1 1456	606 Cabel	Washington	DC
Gruber, Arthur M.	MA 4 6735	1874 Grand	Seattle	Wash

CREDIT AUTHORIZATION

ADDRESS	NAME	AUTHORIZED	LIMIT
1722 Naples St	Davis, R. L.	Mr & Mrs	C-3
4465 Kempire Ave	Eggers, Joseph	Mr	A-2

PRICE RECORD

CAT NO	ITEM	UNIT	LIST	JBR	DLR	BRANCH
534-65	Tube, Glass 1"	Ft	35	20	30	18
534-66	Tube, Glass 1½"	Ft	40	25	35	23

BADGE NUMBERS

NO	NAME	DEPT	LOKR	FL	BLDG
•1654	Slaner, Barney	169	1456	5	18
1655	Barber, Wm. M.	113	1275	2	29

SENIORITY LISTINGS

NAME	DEPT	JOB CLASS	PLANT	DEPT
Williamson, George N.	45	Mach Opr	11-11-45	12-16-48
Longwood, Walter	45	Mach Mtnr	11-23-46	12-23-48

BIN LOCATIONS

PART NO	NAME	BLDG	AISLE	SECTION	BIN	PRICE
CK 136597	FUSE 2 Amp	J	F	12	1	1 15
CK 142503	BULB Lamp	2	A	B	3	1 50

SHIPPING

CONNECTICUT	
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customs duties before delivery to the consignee. Each "Carnet" booklet contains 24 coupons—actually manifests, which are extracted one by one as the trailer skims from boundary to boundary (two coupons are needed for each country). Simple, effective, this plan would be a boon to trailer shipments coming into the United States, allowing quick customs clearance on cargo headed for inland points.

For Use at Home, Too

Reverting to the domestic scene, the outbound fishyback system suggests a mobility and flexibility that should get more traffic departments into a "do-it-yourself" mood. Instead of worrying about the complex packing requirements, companies can use the domestic version. The crating (and trailer loading) that carries cargo safely from New York to San Francisco will stand up from New York to St. Nazaire. Only one all-inclusive bill of lading (domestic version) supplemented by commercial invoices will blanket the trailer shipment, instead of some 26 documents sometimes required in conventional shipments. Pickup at the plant by an interline carrier starts the bulk load, the refrigerated goods, the liquid cargo on its way overseas. And even less-than-trailerloads can be handled.

Rates are low and competitive, all-risk insurance reasonable (reflecting low loss and damage records), pilferage reduced or eliminated, breakage through handling cut to a minimum. And lower freight cost, less complicated procedures, fast deliveries, may give "Made in U.S.A." goods more shelf room in market centers overseas.

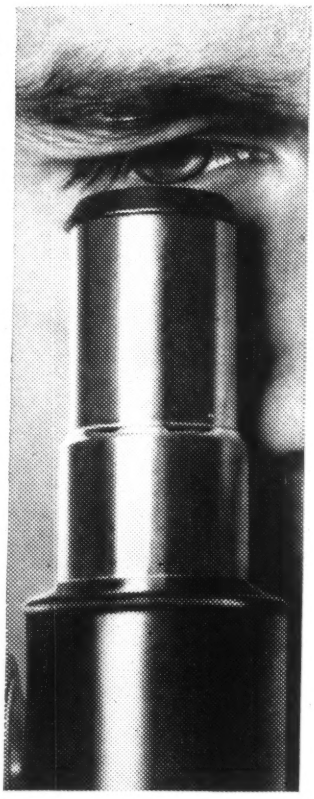
All these are powerful inducements. The impact of the fishyback on export and shipping activities is as yet light. But don't be surprised if tomorrow you see more and more, "Made in U.S.A." trailers on the highways of the world. —A. O. S.

American exporters are urged to mark

United States of America

on external containers of goods shipped abroad

Senate Concurrent Resolution No. 40, adopted July 30, 1953, suggests that such marketing will help to publicize American-made goods overseas.



This man is looking into your future

How does it look? Rosy? Free of cancer? You hope! But hoping isn't enough. Of every 6 Americans who get cancer this year, 3 will die because science still has no cure. It will take lots of research to find that cure. And research takes money. Pitch in and help. Send your dollars to the American Cancer Society today. You'll be bringing yourself and everyone else that much closer to a sure future. Send your check to "Cancer" in care of your local Post Office.

American Cancer Society

beat items as a thunderstorm, trains, jets, babies, an old hand organ, a carousel, steel bands. Many of these disks are played *fortissimo* by hi-fi owners to demonstrate their sets.

Avery L. Fisher got up steam when he formed the Fisher Radio Corporation in 1945. Now he manufactures radios, phonographs, and television sets as well as amplifiers, tuners, and remote control chassis, and employs about 200 people.

Herman Hosmer Scott came out of the Massachusetts Institute of Technology in 1931 and went to work in electronics. In 1946 he resigned his position as executive engineer with a radio manufacturer, and started his present business of manufacturing turntables, pre-amplifiers, amplifiers, radio tuners. There are about 150 employees in his shop, and it is bursting at the seams.

Pickering and Company was chartered in 1946. Today it manufactures amplifiers, pickups, and loudspeakers, and has 125 employees. James B. Lansing Sound, Inc., (100 employees) started to manufacture loudspeakers in 1946. McIntosh Laboratory, Inc. was founded the same year. It manufactures amplifiers and employs 60.

Audio and sound engineer Rudolph T. Bozak stopped working for others in 1948. After nearly a year of preparation, he started the R. T. Bozak Manufacturing Company. Now he employs 35 people to manufacture a line of high-quality loudspeakers, including the only cone speaker designed for the middle range and the only tweeter array.

LP Records Help

In 1948 Columbia Records brought out the long playing record, which a new material, vinyl, had helped make possible. The 12-inch disk presented about 40 minutes of music, since increased to one hour, at a lower cost per minute than ever before. It soon offered higher fidelity, too. You could hear all its heavenly tones, however, only if you had a "rig" that was able to reproduce them. This doomed old phonographs that played 78 revolutions per minute disks in contrast to the 33⅓ revolution disks. The LP record justified improved design throughout the reproducing system. It also spread the

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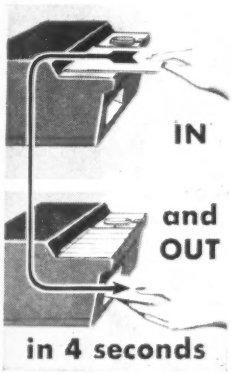

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manufacture of phonograph records from Columbia, Victor, Decca, and a few other companies to nearly the 300 listed in the current Schwann's *Long Playing Record Catalog* (in itself a new product) available monthly in more than 3,500 record shops throughout the United States and in 36 foreign countries.

There's a magazine named *High Fidelity*, too, started in 1951, which now has a circulation guarantee of 75,000. That's about 10,000 higher than its older British opposite, *The Gramophone*. Both carry advertising of manufacturers who wish to reach the "audiophile"—the inner sanctum term for the high-fidelity fan.

Do-It-Yourself Assemblies

The minimum list price of an assembly worthy of the name hi-fi comes close to $300, and that buys reproduction of sound on disks only; it won't play tapes. Fancy rigs run to $1,500. But you can save money if you "do-it-yourself." The Heath Company offers components for building or assembling speaker systems, pre-amplifiers, crossovers. The Audak Company concentrates on tone arms. The Jensen Manufacturing Company can provide a loudspeaker system kit. And there's always something new. If you buy components you can replace any unit easily.

For a time manufacturers thought the hi-fi market was limited to those who comprise the estimated 35 million concert attendance per year. Now they reason that *everybody* loves music.

During the year entrepreneurs arrange shows in Pittsburgh, Philadelphia, Baltimore, Cincinnati, Miami, St. Louis, Washington, Portland (Ore.), Seattle, San Francisco, New York City. The February show in Los Angeles attracted a paid attendance of more than 30,000, plus a free attendance of 5,000.

London's Audio Fair turns up every year, and so do thousands of hobbyists. Mexico, Cuba, Puerto Rico expect to organize shows in 1957. But topping *all* for attendance is Tokyo's show, where 40,000 milled about. U.S. and British products are well represented at all shows.

A few German and Japanese components are shown, too.

G. A. Briggs, designer of Britain's Wharfedale loudspeakers, offers another kind of hi-fi show. During the

past two years he has engaged Carnegie Hall in New York City and the Royal Festival Hall in London to compare hi-fi equipment and "live" artists, and standing room only is the rule. Mr. Briggs admits he has not yet perfectly matched the recorded sound with the actual, but in an A-B comparison in Carnegie Hall many critical listeners could not distinguish between recorded woodwinds and those played on the platform.

Future Developments

What does the hi-fi industry think of the future? Extremely bullish.

Tape is in its infancy. Professionally recorded tapes of music for home enjoyment are now released by nearly 50 companies. The cost is at least twice as high as for the same music on disks, but may not be so expensive in five years. It might replace disks.

Stereophonic sound has caught the imagination, and it seems best served by tape. It requires two channels of music recorded at the same time through microphones set apart. The playback demands *two* amplifiers and *two* speaker systems set apart, too, giving spaciousness that is unique—and increasing the sales of amplifiers and speakers.

The new electrostatic tweeters marketed by Pickering and by the Neshaminy Electronic Corporation have the advance guard speculating on whether it's time for upgrading. Or should one wait for the Ionophone, without moving parts, whose sound source is a radio frequency corona discharge? Or should one look into the Lorenz (Germany) speaker that uses plastic in its design?

A few disks are available at 16⅔ revolutions per minute. Will the fidelity of these disks be improved sufficiently in the next few years to warrant replacing today's turntables that play no slower than 33⅓ rpm?

When will transistors come into general use in amplifiers and so reduce space requirements? Will General Electric's new Borazon, which scratches diamonds with ease, replace the diamond stylus?

As the population grows and as leisure increases, it's fairly certain there will be more demand for hi-fi. When it sounds well, everybody likes to reproduce the music he wants when he wants it. That belief, supported by increasing sales, stimulates the hi-fi industry from designer to retailer.

A
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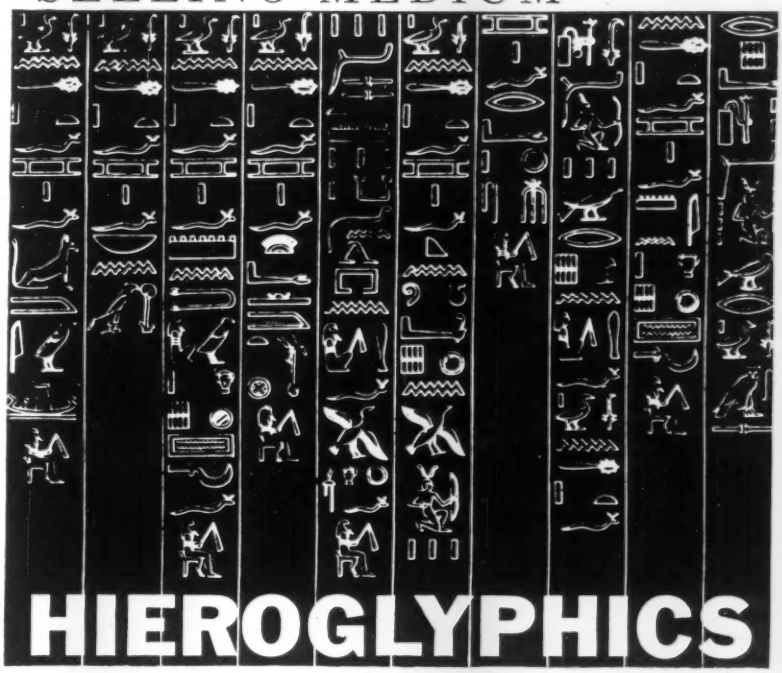

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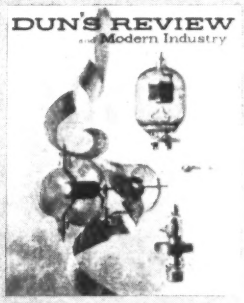

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A PERSPECTIVE ON PROGRESS

IN THE DYNAMICS of our economy, two and two must make five or we are making no progress, but we cannot make five by substituting inflation for the plus factors of productivity, thrift, and management ingenuity.

In the healthy growth of trade, based on a competitive pattern, these elements are necessary: (1) the initiative of the individual in a risk that promises more than personal or private reward; (2) the opportunity to accumulate capital for projects in which large numbers of people can develop our natural resources, process goods, and serve markets; and (3) the proper balance of freedom and discipline that will enable us to create enough wealth to pay capital for its services, and maintain a reasonably high living standard. Capital in its best sense is not money, or materials, or management, or technology, or labor—it is all of these, which are the resources that we draw upon to give movement, direction, and objectivity to our economic life.

There is reason to be proud of our material and social gains, but we have equal reason to blink at the horizon, and ask a few questions. Through the ingenuity of the tool maker, we can make things faster than we consume them. Society has accepted the 19th century luxury as the 20th century necessity. Our prosperity is married to the whims of the consumer, who must maintain a prodigious appetite for goods and services. But let us not mistake momentum for progress, or accept inflation for growth.

We have inflated the economic balloon, vulcanized and insulated it against pinpricks with a fair degree of success. For fifteen years, we have attempted to valve off pressures, and fight off sudden bulges or basins due to inflationary or deflationary situations. But there is some evidence now that inflationary pressures are putting additional tension on the balloon that lightens the burden of the national debt. A sudden deflation could make the weight unbearable.

There is also evidence of increasing management difficulty in making two and two add up to five. Profit margins are feeling the increased pressures, as costs and taxes lift from below with the inexorable power of a giant screwjack. What is the answer—productivity by which we make more and sell more? Cut costs by examining, by calling on every budgeted dollar to justify itself? Ask Uncle Sam to lessen the bite out of individual and corporate earnings? These questions bear on the problem, but there is another question that is as personal as a jibe at the mirror. The question is: "Are we deluding ourselves with a warped sense of values?" Inflation is the lazy man's illusion of progress. A coin always looks bigger under the magnifying glass. Inflation can infect judgment as well as distort vision.

Every citizen who expects society in general, or the government in particular, to assume his burdens of decision and action contributes to the inflationary pressures around him. There is an ancient motto that says, "The people who are least governed are best governed," but it has no appeal in the illusions of the welfare state. Our civilization is so complex that we require regulation, but it is a foolish citizen who insists upon enlarging it by default of personal interest or moral challenge.

Business men, too, have gotten the habit of looking to Washington for help, when the answer is right in their own bailiwick. Through tax priority, Uncle Sam is a privileged partner, a preferred stockholder in every enterprise, but there is no need to give him a voting control by dodging individual decision. We can make our first step toward slowing up inflationary forces by increased personal enterprise and ingenuity, by producing goods and performing services at a price that is attractive in the market, and by making decisions that are as well grounded in fact and principle as they are individual in application to our own business welfare. And we can do something about it right now!

The Editors

The Telephone Waveguide is one of the many new things that will help to give you better, faster service. We expect a pair of these specially designed tubes may be capable of transmitting electrical waves vibrating up to 70,000 million times a second and may carry as many as 400,000 telephone conversations or hundreds of TV pictures at one time.

The Future Holds Great Promise

There is far-reaching growth ahead for the telephone business, with many new things for telephone users.

Telephone growth has been tremendous in recent years. And there is much more to come.

Since 1940 the number of households in the United States has increased about one-third. But here's a significant fact. The number of households with telephones has increased over two-and-a-half times!

The future increase in population alone will bring new growth to the telephone business. But there will also be a greater use of the telephone and more telephones around the house. This will be accelerated by new services and equipment for every need and location.

An important part of our service in the not too distant future will be a wider range of telephones from which our customers can choose. They will be of varied sizes, styles and colors for the particular needs of the living room, bedroom, kitchen, recreation room, etc.

Recent major developments in new and improved service give promise of much future growth.

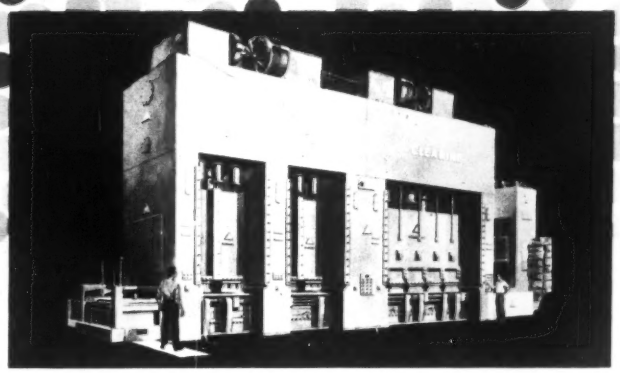
The inauguration of service on the underseas cables to Great Britain and to Alaska has already brought large increases in traffic. Another cable system is under construction from the United States to Hawaii.

The coming years will also see a great increase in the use of Bell System lines for data transmission. Another new and growing field is the transmission of special TV programs over closed circuits to theaters, hospitals, branch offices, etc.

Each new development means not only better service for the public and business but broader opportunities for the telephone company. As we make our services more convenient and valuable, we also increase their use by more and more people.

Working together to bring people together

BELL TELEPHONE SYSTEM



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The conventional attitude toward automation has been that a manufacturing process could be automated providing that the number of parts to be manufactured is large and the quantity predictable.

New developments at Clearing—Modular and Transflex press lines have forced a re-definition of this attitude. Clearing has designed and built machines capable of automatically producing a number of different parts. Changeover from one press run to the next is a fast, and relatively simple job.

Modular presses, like the one above, are machines actually built with the possibility of major future changes in mind. Nothing new under the sun? You'll wonder when you see the way Clearing has altered the economics of press automation. This matter is discussed in a fact-filled book called "The New Economics of Press Automation" now being prepared. Write today to reserve your copy.

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